PLUGGEDIN



Technically Speaking | p.3

Get the first look at the 2021 Ontario Electrical Safety Code Amendments



Licensing Matters | p.12

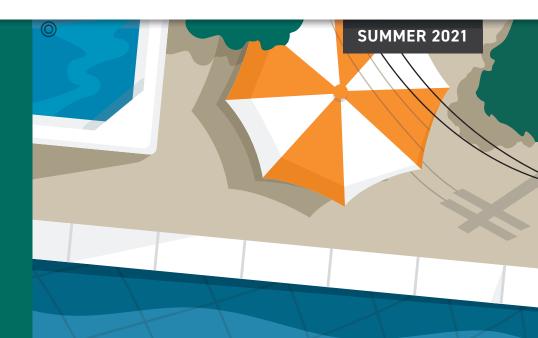
Compliance outreach is motivating compliance & changing behaviour



Code Conundrum | p.20

Can you solve the code conundrum?





Safe Pools and Hot Tubs

Everything you need to know when installing a pool or hot tub



















Year-To-Date Convictions

UNLICENSED V

Dan Thurber, operating as Lake **Country Contracting, Fort Frances**

Rebuilt cottage after flood including the electrical

• \$1,500 fine, plus \$375 victim surcharge – no Electrical Contractor (EC) licence

Jenkyn's Eletric (2008) Ltd., Winnipeg

Cottage wiring

• \$2,000 fine, plus \$500 victim surcharge - no EC licence

Todd Jenkyn's, Winnipeg

 Director/Officer Failed to Take Reasonable Care - suspended

Gemstone Finishes Inc., Brampton

House renovation

- no EC licence suspended
- failure to apply suspended

Ahmed Farooq, Brampton

• Director/Officer Failed to Take Reasonable Care 2 counts suspended and 2 years probation to not conduct electrical work without an EC licence

Gemstone Construction Inc., Brampton

House renovation

- no EC licence suspended
- failure to apply suspended
- employ an unlicensed electrical contractor - suspended

Rukhsana Kausar, Brampton

 Director/Officer Failed to Take Reasonable Care 2 counts suspended and 2 years probation to not conduct electrical work without an EC licence

Miguel Romero Escoto o/a Denali, Denali Research Corporation, Ottawa

Apartment wiring of 103 units at different locations

- \$3,000 Fine, plus \$750 victim surcharge x three counts no EC licence (\$9,000 Fine. plus \$2,250 victim surcharge)
- \$2,000 Fine, plus \$500 victim surcharge x three counts failure to apply (\$4,500 Fine, plus \$1,125 victim surcharge)























First Look at 2021 Ontario Electrical Safety Code Proposed Amendments

ESA is currently working on the adoption of the new 28th edition of the Ontario Electrical Safety Code (OESC). Pending Government approval, the effective date of the new OESC is planned for May 2022.

ESA held a public consultation on the proposed Ontario amendments in spring 2021. The consultation was shared with industry, safety stakeholders and ESA Advisory Councils and was published on the ESA website requesting feedback on the proposed changes. ESA appreciates and thanks everyone who submitted feedback. Responses to the received feedback will be published on the ESA website by early June 2021.

The table below outlines the proposed amendments for the 28th edition of the OESC. More information on the 2021 OESC will be shared in the next issue of Plugged IN and on the ESA website.

Proposal Number	Rule	Description of Change
2021-OA-001	2-005 c), amended	An Inspection Notification is required for installation of residential elevators even when supplied by Class 2 power supply.
2021-0A-002	4-004 26), new	Reduced conductors' size for single dwellings' services and feeders.
2021-OA-003	10-611, deleted	Deleted existing amendment about installation of equipment bonding conductors.
2021-OA-004	12-022, deleted	Deleted existing amendment about cables and raceways in roof decking.



















First Look at 2021 Ontario Electrical Safety Code Proposed Amendments (Continued)

Proposal Number	Rule	Description of Change
2021-OA-005	2-010(1)20-030, 20-030, 20-034, deleted	Deleted existing amendment about requirements for cylinder exchange.
2021-OA-006	64-000 1), 64-002, 64-900 to 64-908, deleted	Deleted existing amendment about energy storage systems.
2021-OA-007	68-072, amended	Maintenance disconnecting means for pool equipment is not required within sight.
2021-OA-008	72-114, deleted	Delete existing amendment about location of receptacle on recreational vehicle lot.
2021-0A-009	75-000, amended	Added central metering systems into Scope.
2021-0A-010	75-002, amended	Added definitions for central metering systems, demarcation point, embedded infrastructure, grades of construction and structure.
2021-0A-011	75-200, amended	General editorial changes for Specifications 9.1, 9.2, 10.1, 10.2, 11.1, 11.2, 11.3, 11.4, 12.1, 13.1, 13.2, 14.2, 14.4, 15.1, 15.2, 15.3, amended to align with new Spec 35.1.





















First Look at 2021 Ontario Electrical Safety Code Proposed Amendments (Continued)

Proposal Number	Rule	Description of Change
2021-0A-012	75-306, amended	Specifications 10.3, 10.4, 10.5, 12.2, 12.3, 13.3, 13.4, 14.1, 14.3, 16.2, 17.4, 18.3 amended to align with new Spec 35.1 and removed Note 1 about guying requirement.
2021-0A-013	75-406, amended	Clarified minimum breaking load to guy wire grade.
2021-0A-014	75-504, amended	New Rule to indicate attachment methods for neutral conductors. Includes changes to Spec 35 and new Spec 35.1.
2021-0A-015	75-604, amended	Added shear bolt type connectors.
2021-0A-016	75-710, amended	Revised rule to include new Table 106 for quadraplex cable.
2021-0A-017	75-902, amended	Revised clearance requirements of conductors from other structures.
2021-0A-018	75-904, amended	Revised Central Metering requirements to include pad mounted installations.
2021-0A-019	Specification 28, amended	Revised requirements for pole-top transfer device.
2021-0A-020	Specification 34, amended	General revisions.
2021-0A-021	Specification 45, amended	Added ground butt plate and editorial to changes to items #2 and 3.

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Wiring Methods for Ductless Mini-Split Air Conditioners

OESC Bulletin 26-24-* and ESA SPEC 007 "Residential HVAC and Hot Water Tank Installations" currently permit the following two types of cables certified to UL standard UL 1277 as acceptable wiring methods for interconnection of mini-split air-conditioners' units:

- Type TC cable marked as "TC-ER-JP", and
- AWM cable that is also PLTC type.

The permission of accepting TC-ER-JP and AWM cable Type PLTC certified to UL standard UL 1277 will expire in June 2021, TC-ER cables (certified to CSA standard C22.22 No.230) and other cables and wiring methods permitted by Section 12 are commercially available and represent adequate alternatives, since UL standard for tray cables, UL 1277, is not harmonized with CSA standard, C22.2 No.230.

Starting June 1, 2021, ESA inspectors will issue postponements when cables for interconnection of units in ductless mini-split air conditioners are certified to UL standard UL1277 only. The postponements will be issued until Sept. 1, 2021, with the intent to change contractors' practice.

TC-ER CABLE

Although Code permits TC-ER cables for transition between cable trays and utilization equipment or devices,



ESA will further permit this cable for interconnection between mini-split ac units since TC-ER cables comply with the crush and impact requirements of armoured (or metal clad) cables. Regarding use of TC-ER cables, Bulletin 26-24-*provides additional requirements:

Notwithstanding Rules 12-100 and 12-2202 3). TC-ER cable (certified to CSA standard C22.22 No.230) shall be permitted to be used for interconnection of units in ductless mini-split air conditioners installations provided that it is:

- Installed as per Rules 12-508, 12-512, 12-518 and 12-520 (rules for non-metallic sheathed cables):
- continuously supported; and
- not pulled through joists (structural members).

















SUMMER 2021

Licensing Corner



by Soussanna Karas, Director of Licensing

As I mentioned in the previous issue of Plugged In, ESA's Licensing Department has been busy with the review and implementation of recommendations in the Auditor General Report released in December 2020. One of the recommendations in the Report relates to implementing a Continuing Education requirement as part of a mandatory condition of renewal for a Master Electrician (ME) licence.

ESA, in partnership with ECRA Advisory Council (ECRA AC),¹ has been working to design a robust continuous education framework for Master Electricians in Ontario.

Both ESA and ECRA AC recognize the importance of communicating and promoting the value of licensed electrical contractors and master electricians to the industry, stakeholders and general public. Providing opportunities for MEs to take courses to stay current with the OESC, workplace health and safety requirements and consumer protection legislation, will increase electrical safety, compliance and consumer confidence in the Province.

In March and May, 2021, ESA conducted two consultation sessions with ECRA AC. An overwhelming majority of the ECRA AC members agree that MEs should be required to take OESC update courses every cycle as a mandatory requirement of their licence renewal.

A majority of ECRA AC members also agree that workplace health and safety courses are beneficial for MEs and should be included as part of the Continuing Education (CE) framework. ECRA AC members identified flexibility, consistency, high quality of technical knowledge and accessibility as important criteria for continuing education course providers.

1 ECRA AC is one of the ESA Advisory Councils whose mandate is to seek feedback, monitor, review and provide advice and recommendations to ESA on matters related to licensing, examination, registration and certifications of MEs and LECs. ECRA AC members include master electricians, licensed electrical contractors, consumer and public representatives, utility contractors' representatives and representatives from the municipal sector.

















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Licensing Corner (Continued)

ESA will continue its collaboration with the key stakeholders, including ECRA AC, CoAC, and other Advisory Councils, in order to ensure that the CE framework is responsible, adaptive, agile and meets the needs of contractors and reduces administrative burden.

Recognizing the importance of this topic, ESA is committed to an inclusive and transparent consultation process. As such, ESA will conduct a public consultation from June 15 to July 15, 2021.

This is your opportunity to provide your feedback on mandatory continuing education for MEs. Feedback will be collected via an online questionnaire and through email. Responses will be collected and analyzed by LURA Consulting – ESA's external stakeholder engagement consultant.

For more details, see below on the continuing education initiative.

Ontario Electrical Safety Code 28th Edition: Public Consultation Feedback and Resolution

Recently, ESA held a public consultation seeking the views of LEC and other stakeholders on proposed amendments to the Ontario Electrical Safety Code (OESC).

ESA's response to this feedback has now been posted <u>here</u> on ESA's website. The revised proposal drafts are based on ESA's review of the feedback received during the public consultation and discussion with Ontario Provincial Code Committee (OPCC).

Pending the Ministry of Government and Consumer Services (MGCS) approval, the OESC 28th edition will come into effect May 2022.

ESA thanks all stakeholders who submitted comments and feedback during the public consultation for Ontario Amendment (OA) proposals.



















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Continuing Education

In December 2020, the Auditor General (AG) of Ontario published a Value for Money Audit of the ESA. The report outlined multiple recommendations for the ESA. One of these recommendations focuses on **continuing education**.

WHAT IS CONTINUING EDUCATION (CE)?

CE is a series of learning activities such as workshops, e-learning and seminars.
CE has several benefits – for professionals, our industry and overall public safety, including:

- Promoting a system of ongoing learning to strengthen knowledge and standards
- Ensuring that qualifications do not become outdated
- Allowing individuals to up-skill and re-skill throughout their careers

WHAT IS THE AG RECOMMENDATION?

Recommendation 17.1 from the AG reads: "To enhance public electrical safety, we recommend that the ESA work together with the Ministry of Government and Consumer Services (MGCS) to implement a continuing education requirement as a condition of master electrician licensing." This includes mandatory continuing education for MEs to enhance safety and compliance with the OESC.

Following stakeholder engagement, ESA will report to MGCS on feedback received.
MGCS will make the final decision on continuing education for MEs.
MGCS may conduct further consultation regarding the required regulatory change, if required.





















PROPOSED CE FRAMEWORK

ESA proposes that MEs will be required to complete CE as part of the license renewal process (every five years). From our perspective, this timing adds the least amount of burden to MEs. The CE requirement will include two components:

Continuing Education

- Compulsory courses: OESC and amendments
- Elective courses: a list of courses offered by approved providers

WE WANT TO HEAR FROM YOU

We are now collecting input on a model for delivering continuing education. We want to understand stakeholder issues, concerns and priorities relating to what is included in continuing education, how often it is required, and who needs to complete continuing education. We have retained LURA Consulting - a third-party engagement consultant - to help gather your ideas and feedback.



To provide your input, please visit https://esasafe.com/public-consultations/ continuing-education or email CEconsultation2021@lura.ca by July 15, 2021.



















SUMMER

2021

Master Electrician Licence Online Portal Opens

On June 28, 2021 ESA will launch a Master Electrician Portal to compliment our other online services. This was the result of ESA working hard over the last year to fast track digital projects that will help ease the burden for our stakeholders during the pandemic. The Master Electrician (ME) Portal will allow current MEs to make payment for their annual licence fee online.

In order to take advantage of this option, we urge all MEs to provide their valid email address to the Licensing Department and change their preferred mode of communication to email

Those MEs with a valid email address will automatically be enrolled in the portal and will be sent a direct email with a temporary password. The email will be sent closer to the renewal date of your ME licence.





We appreciate that there may be questions as the new portal launches, and we have provided a section on our website to help make the process easier. Please visit the ESA website for more information or email us at: esa.licensing@esasafe.com.

Licensed Electrical Contractors (LECs) already have the option to pay their annual licence fees through the LEC Portal. If would like to register for the portal please call 1-877-372-7233.

ESA will continue to work towards enhancing our online solutions for our licensees.















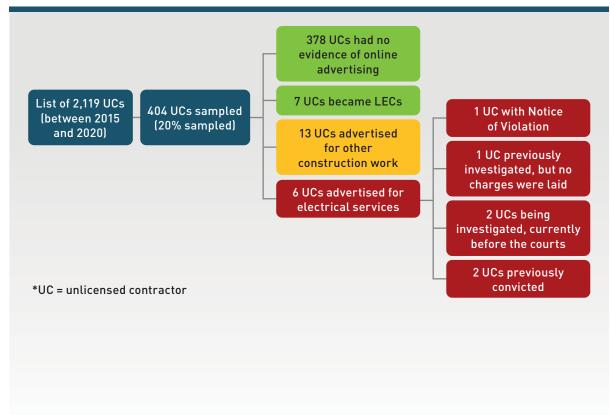


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ESA Compliance Outreach is Motivating Compliance and Changing Behaviour

- Guided by the Licensing Department Strategic Plan, the Licensing Department conducted data analysis of its educational and compliance correspondence issued to unlicensed contractors in order to determine the degree of compliance.
- Licensing Department with the assistance of Data Analytics, reviewed 5+ years of historical data and selected a sample of unlicensed contractors who had been issued Notices of Violation for working without a licence. An Internet search was then performed to determine whether these contractors were offering electrical services.

The results revealed that 99% of the businesses were not advertising. Such a high percentage is a clear indication that Notices of Violation is an effective tool to motivate compliance and change behaviour. ESA will review outcomes and take necessary steps to pursue those who continue to participate in the underground economy. ESA will continue to utilize a range of compliance measures in the most effective, reasonable and consistent manner in order to correct noncompliant behaviour and advance the culture of electrical safety.



















SUMMER 2021

ESA Partners with the Holmes Group to Educate Homeowners on their **Electrical Responsibilities**

ESA mentioned in Holmes on Homes Podcast

As part of ESA's Hire a Licensed Electrical Contractor campaign, we are pleased to share that we have partnered with the Holmes Group to educate homeowners on the need to hire a Licensed Electrical Contractor, file a notification of work with ESA and understand the differences between a Licensed Electrical Contractor, Master Electrician and Certified Electrician.



With over one million combined followers on social media and more than 100 million annual media impressions, we are confident that this partnership will help reach and educate homeowners across the province.

"Some of the biggest renovation nightmares I've come across involved bad electrical work. Knowing when it's time to bring in a pro is key to keeping your home safe from risk of electrical fires," said Mike Holmes, professional contractor and TV Host, the Holmes

Group. "This is why I am partnering up with the Electrical Safety Authority, together, we will raise awareness of safe electrical work. And that means keeping Ontarians safe from electrical harm."

The communications campaign will include posts across the social media channels of Mike Holmes, Sherry Holmes and Mike Holmes Jr. videos. blog posts, Twitter chats, and the potential for integration into relevant TV episodes.

ESA was also discussed in an Holmes on Homes podcast episode featuring Frank Cozzolino, owner and Licensed **Electrical Contractor of Solutions** Electrical and well-known Holmes on Homes TV personality.

The episode was released on April 29 on all major streaming platforms including Spotify, Apple Podcasts, Google podcasts or you can watch them on the Make it Right website.





















There are often multiple parties involved in the construction of a pool. An unlicensed contractor (i.e. a pool installer) may install the bonding, and another party may install the electrical for the associated pool equipment (a licensed electrical contractor (LEC) or the property owner).

2021 Inspection Fees for Pools

The fee to inspect a pool reflects which parties are involved in the project.

LICENSED ELECTRICAL CONTRACTOR **DOING COMPLETE PROJECT**

The fee for an LEC installing the bonding and equipment is \$145 which includes two inspection visits. There is no charge to inspect the wiring of a pool shed (a structure housing the pool equipment) if it's done at the same time by the same contractor.

The fee to inspect a pool house (a structure containing other facilities

in addition to the pool equipment, such as a bathroom, kitchen/cooking, audiovisual equipment, etc.) or a pool shed that requires a separate inspection visit, depends on the number of outlets and devices installed in the structure per Section 4.5.4 of the ESA Fee Guide.

POOL INSTALLER AND LEC/ PROPERTY OWNER

If the pool installation is split between an installer doing the bonding and an LEC connecting the equipment, the fee is \$74 for the LEC and \$80 for the other installer - for each application. There is no fee for a trench if it is inspected during the same inspection visit as other work. If the trench is inspected separately then the fee is \$153.

Pricing for the inspection of pools is outlined in Section 4.5 of the Fee Guide.























Important News on **Plan Review Submissions**

In September 2020, ESA launched its Plan Review Portal for electronic uploading of completed submission forms, drawings and all supporting documents. The Portal provides quick and direct access to the Plan Review notification number and has functionality for tracking your submission to see its current status. You can share your submission with other registered users in your organization and allow them to add documents, receive email notifications and view the status of your submission.

We are phasing out acceptance of documents that are not submitted via the Portal. As of Sept. 14, 2021, ESA will no longer accept email, fax and paper submissions. If you have not yet registered for the Plan Review Portal, please do that as soon as possible. Registering is easy and we host regular online training sessions on how to use the Portal. Here are the details:

- Call the ESA Plan Review department at 1-800-746-6480. Having access to a computer for this call is helpful in verifying and completing your registration. Please have the following information ready: the name, email address and phone number of the individual you would like to be setup as your Electronic Plan Review online account Administrator. A member of our Plan Review team will assist you in setting up your new ESA online account and can sign you up for a training session.
- After your account is set up, the process remains the same as it is now; However all communication and sharing of documents takes place via the Portal.
- Any new submittals will then be sent to ESA via the Plan Review Portal (i.e., email, fax and paper submissions will not be accepted).

Please note: being a user of the LEC Portal does not grant access to the Plan Review Portal. If you're also a Plan Review customer you will need to register for use as noted above.



















COVID-19 Safety Campaigns

ESA proudly supported the Provincial COVID-19 Safety Campaigns initiative under the Reopening Ontario Act (ROA) and assisted the Ministry of Labour, Training and Skills Development with volunteer inspectors from May 17 to May 28, 2021. Ministry for Government and Consumer Services asked for ESA support and in the true spirit of our organization and public safety mandate, a number of inspectors immediately volunteered for this important initiative. Together with colleagues, from different Ministries and as a part of Provincial Cross-Ministry teams, our volunteer inspectors visited identified essential businesses/ workplaces in six public health regions, and provided information and education about Ontario's COVID-19 health and safety requirements, with the goal to help businesses "stay safe and stay open". A big 'Thank You' and gratitude to our volunteer inspectors who supported this important Provincial initiative and assisted with targeted COVID-19 safety campaigns.

Virtual Instructor-Led Training (VILT)

Are you interested in taking ESA courses from the comfort of your home? ESA, like many businesses offering training services, now offers a variety of technical training and safety courses, virtually. Our VILT is live, instructor-led, and interactive and is designed to provide the same experience as the traditional in-person classroom courses, while taking advantage of the convenience and technology of an online virtual environment.

To take the virtual training you will need:

A web-camera, headphones with microphone or computer with speaker and microphone

Internet speed of 15 Mbps Download, 1.4 Mbps Upload

Browser: Windows (Chrome 65, Mozilla Firefox 52, Edge 42 and later) Mac OS X (Chrome 65, Mozilla Firefox 52, Safari 11 and later)

To find out more about VILT or sign up for a course, visit: https://esasafe.com/contractors/safety-and-technical-training/

Take advantage of our virtual training today!





















Updated Guidance on Submission of Photos or Video Files to ESA Inspectors **During Covid19 Outbreak**



Protocols were developed last year to respond to the COVID-19 pandemic. In light of ongoing public health concerns and feedback from stakeholders. we have reviewed our Photo/Video Guidance and made some changes.

WHAT HAS CHANGED?

1 INCREASED GUIDANCE ON IMAGES

Images sent to ESA should capture the relevant elements of the installation. To provide more clarity, the updated Guidance provides lists of the images that an inspector might ask for during a remote inspection.

2 CHANGE TO ATTESTATION PROCESS

ESA will no longer require an attestation to be provided every time images are submitted. Instead, when any party submits images for the purpose of inspection, they are deemed to be agreeing to the following:

The submitted photographs and/or videos are a current, fair and accurate depiction of the electrical installation and work performed pursuant to the identified notification, at the identified address.

It is important to note that photos and video are only accepted when the Inspectors instructs the Licensed Electrical Contractor to submit them. Do not send images prior to receiving direction from the Inspector to do so.

For details, please review the updated Guidance here.



















Powerline Clearances and Pool Installations

ESA has seen an increase in the number of pools installed since the pandemic. There have also been an increase in the number of locations. where pools have been installed near or under overhead wiring where the required clearances in the OESC have not been met. ESA is reminding LECs attending a location to perform electrical work for the pool or quote on a job, to inform pool installers of the clearance requirements of Rules 68-054 Overhead wiring and 68-056 Underground wiring in the OESC.



As an LEC, here are a few key items to remind the installer:

- Determine if the proposed location of the pool will be near overhead or underground powerlines;
- Consult with the Local Distribution Company to determine if the proposed pool location will meet the minimum clearance requirements from the powerlines;
- Determine if there is any customer-owned underground wiring (i.e. supply to a garage or shed) - this will require a private locate.
- Utilities may have underground wiring or services in the proposed pool location. Call before you dig! Contact Ontario One Call for locating all utility-owned underground infrastructure including natural gas, communications and power lines, as well as water and wastewater pipes.



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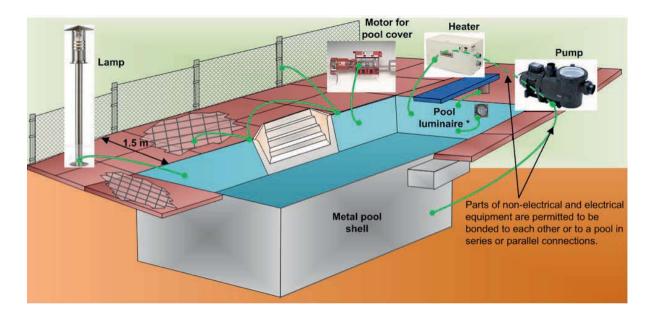




Bonding of Non-current-carrying Metal Parts of Pools

Rule 68-058 of the OESC requires all metal parts of the pool and of other non-electrical equipment associated with the pool to be bonded together and to non-current-carrying metal parts of electrical equipment. This includes piping, pool reinforcing steel, ladders, diving board supports and fences within 1.5 m of the pool. The Rule also applies

to decorative-type pool luminaires and lighting equipment not located in a forming shell, metal screens of shields for underwater speakers, conduit and junction boxes by a copper bonding conductor not smaller than No. 6 AWG. Missing bonding may create an electric shock hazard that could lead to Electric Shock Drowning (ESD).



The required bonding for swimming pools is important to create equipotential surface, and eliminate any potential difference in the body of water and electrical equipment. For more information on OESC requirements for swimming pool bonding, please refer to **Bulletin 68-7-***.

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Equipment marked Ex ia Gb is suitable for installation in Zone O location

- a. True
- b. False



The ampacity of conductors in a bundle of 11 copper eightconductor cables No. 26AWG marked 75°C is:

- а 1 А
- b. 0.8 A
- c. 0.5 A
- d. None of the above



An alternating current system is permitted to be ungrounded if:

- a. Equipped with suitable ground fault detection
- b. Maintained by qualified persons
- c. A&B
- d. None of the above, grounding is required for all alternating current systems

ANSWERS:

Question 1: b. False (Ref: Rule 18-090 and Table 18) **Question 2: b.** 0.8 A (Ref: Rule 16-330 & Table 60)

Question 3: c. A&B [Ref: Rule 10-400]























SAVE THE DATE

2021 ANNUAL MEETING & ONTARIO ELECTRICAL SAFETY AWARDS

September 30, 2021

2021 ANNUAL LICENCE HOLDER MEETING

November 18, 2021 – 2 p.m. to 4 p.m. Look for your invitation in the fall.



















ESA is Launching a Podcast Series for Electrical Contractors -"Grounded in Ontario"

ESA is launching a new podcast series, Grounded in Ontario, made especially

for Licensed Electrical Contractors. Master and certified electricians.

Grounded in Ontario brings listeners the forum to hear from ESA's electrical experts and technical advisors, to discuss industry trends, Ontario Electrical Safety Code updates and technical guidance. And, we are doing it in a way that makes it easy for you to stay up-to-date. In the time it takes you to get a coffee... you can listen to the podcast!

Our first episode is about pool & hot tub installations and will launch in the coming weeks, so make sure you listen and subscribe to the Grounded in Ontario podcast through Apple Podcast, Spotify Podcast, Amazon Podcast so you're notified whenever a new episode becomes available.



Future episodes include electric vehicle supply equipment and energy storage systems, just to name a few. We also invite you to submit your technical questions or ideas for future episodes by emailing us at podcast@esasafe.com. We want to connect with you and talk about things that are important to you, our LEC community! Stay informed and stay grounded!

To access the podcast please follow the link: https://esasafe.com/podcast





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Please send your comments or story ideas to plugged.in@electricalsafety.on.ca.