

BONDING & GROUNDING SEMINAR

2020 NFPA | NEC



MIKE HOLT

OF MIKE HOLT ENTERPRISES

MONDAY, APRIL 29, 2024

Lowcountry Conference Center
406 Sigma Dr. Summerville, SC 29483

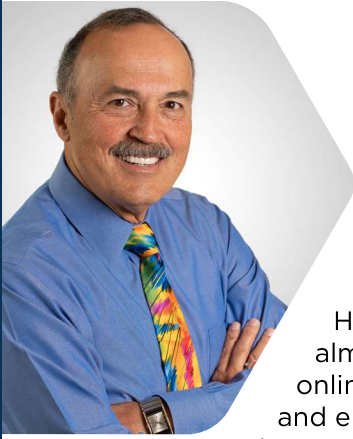
DON'T MISS this opportunity to learn about Bonding & Grounding straight from the man himself - *Mike Holt live and in person in South Carolina.*

**FREE INDUSTRY TRADE SHOW
IMMEDIATELY FOLLOWING SEMINAR**



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ABOUT MIKE HOLT - INSTRUCTOR BIO

Mike Holt is an author, businessman, educator, speaker, publisher and National Electrical Code expert. He has written hundreds of electrical training books and articles, founded three successful businesses, and has taught thousands of electrical code seminars across the US and internationally.

His company, Mike Holt Enterprises, has been serving the electrical industry for almost 50 years, with a commitment to creating and publishing books, videos, online training, and curriculum support for electrical trainers, students, organizations, and electrical professionals. His devotion to the trade, coupled with the lessons he learned at the University of Miami's MBA program, have helped him build one of the largest electrical training and publishing companies in the United States.

His broad experience has given him a unique perspective on building a profitable business that is committed to its customers and to quality. From an early age, Mike understood the need for working on your business, not just in your business. As a businessman, he understands the need for continuous education in order to keep current and stay relevant. As an educator, he has a commitment to help instructors improve their skills in the classroom and enrich the learning environment for their students. His deep understanding of the trade, dynamic presentation style, and ability to connect with students are some of the reasons that he is one of the most sought-after speakers in the industry.

Mike is committed to changing lives and helping people take their careers to the next level. He has always felt a responsibility to provide education beyond the scope of just passing an exam. He draws on his previous experience as an electrician, inspector, contractor and instructor, to guide him in developing powerful training solutions that electricians understand and enjoy. He is always mindful of how hard learning can be for students who are intimidated by school, by their feelings towards learning, or by the complexity of the NEC. He's mastered the art of simplifying and clarifying complicated technical concepts and his extensive use of illustrations helps students apply the content and relate the material to their work in the field. His ability to take the intimidation out of learning is reflected in the successful careers of his students.

Mike's commitment to pushing boundaries and setting high standards extends into his personal life as well. He's an eight-time Overall National Barefoot Waterski Champion. Mike has more than 20 gold medals, many national records, and has competed in three World Barefoot Tournaments. In 2015, at the tender age of 64, he started a new adventure—competitive mountain bike racing. Every day he continues to find ways to motivate himself, both mentally and physically.

Mike and his wife, Linda, reside in New Mexico and Florida, and are the parents of seven children and seven grandchildren. As his life has changed over the years, a few things have remained constant: his commitment to God, his love for his family, and doing what he can to change the lives of others through his products and seminars.

Bonding & Grounding is the most important and possibly least understood article in the NEC®. Surveys have repeatedly shown that a high percentage of electrical shocks and power quality problems are due to poor bonding or grounding (not to mention the hazards) created from the misapplication of the NEC rules.

- From Mike Holt about the Bonding & Grounding Seminar



Mike will clear up misconceptions about bonding versus grounding and breaks down each of the Code articles that deal with this topic. Mike's ability to explain these rules and their practical application in real-world settings will help you to fully understand the "why" behind these rules, helping to ensure you know how to apply the NEC every day.



A NOTE FROM ACES PRESIDENT JOHN MARSHALL



Atlantic Coast Electric Supply (ACES) is pleased to announce the latest course in our educational lineup – a Bonding & Grounding Seminar, based on the 2020 NEC Code, with electrical industry expert, instructor Mike Holt. At ACES, we strive to support our customers to excel both personally and professionally. Our sales, purchasing, and marketing teams work tirelessly to ensure you have the best products available, any manufacturer support needed, and the knowledge to make it all work. And now, we are providing educational opportunities to ensure you have the most current information available so you can stay at the top of your trade!

Please join us in Summerville, SC on April 29 for this special opportunity to see Mike Holt in person and learn from one of the industry's top instructors. We know you will enjoy Mike's relatable and easy to understand approach to one of the most important topics in the trade as he tackles Bonding & Grounding. His passion for training electrical professionals so they have the correct knowledge to conduct their jobs in a safe and thorough manner comes through every time he speaks. You certainly don't want to miss this one day course.

We are also hosting our 2024 Industry Trade Show immediately following the seminar. Stay to meet with over 40 manufacturers who will feature their top products and services. We have partnered with these key manufacturers to bring you the best quality materials and welcome the opportunity to introduce you to them. Of course, there will be plenty of great food and beverages and great raffle prizes too!

I look forward to seeing you!

John Marshall
President & CEO,
Atlantic Coast Electric Supply



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UP-TO-DATE DETAILS.

DID YOU KNOW...

Electrocutions are the fourth leading cause of death among construction workers in the United States. An average of 143 construction workers are killed each year by contact with electricity. Electrical workers had the most electrocutions per year, followed by construction laborers, carpenters, supervisors of non-electrical workers, and roofers.*

**Electrical Safety, Safety and Health for Electrical Trades, Department of Health and Human Services*



JOIN US

in Summerville, SC
at the
Lowcountry Conference Center
(406 Sigma Drive)



for the ACES Bonding & Grounding Seminar (based on the 2020 edition of the NEC) & Industry Trade Show.

Please note: the 2020 edition of the NEC is the current code version used for qualifying CEUs in Georgia, North Carolina and South Carolina.

Hotel accommodations are available at the Hilton Garden Inn Summerville (adjacent to the Lowcountry Conference Center). An Atlantic Coast Electric Supply preferred rate of **\$159/night** plus taxes, based on availability, through March 29, 2024. **Limited rooms available, so book early!**

GENERAL REGISTRATION



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REGISTRATION
AFTER APRIL 7TH:
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*10% Volume Discount
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AGENDA

Monday, April 29, 2024

- 7AM** - Registration Opens/Continental Breakfast
- 8AM** - Seminar begins with Mike Holt
- 12 Noon** - Lunch
- 1PM** - Seminar Continues
- 4PM** - Industry Trade Show Opens
- 5PM** - Seminar Concludes
- 7PM** - Trade Show Closes

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CEUS CONTINUING EDUCATION UNITS

This course qualifies for Continuing Education for electricians in the states of North Carolina and Georgia (8 hours).

This course qualifies for Continuing Education for electrical inspectors and code enforcement officers in South Carolina (6 hours).

Contact Joan Davis for more information:
703-403-7119 | EPICMeetings@gmail.com

Something to Consider - Personal Liability

Personal legal liability for electrical accidents can vary depending on the specific circumstances, jurisdiction, and the parties involved. Here are some key factors to consider when it comes to personal legal liability in electrical accidents:

1. Negligence: One of the most common bases for personal liability in electrical accidents is negligence. If a person, such as an electrician, electrical contractor, or homeowner, fails to exercise a reasonable standard of care in electrical work and an accident occurs as a result, they may be held liable. Negligence can include improper installation, inadequate maintenance, or failure to follow electrical codes and regulations.

2. Duty of Care: The extent of a person's liability often depends on their legal duty of care in a particular situation. Electricians and electrical professionals, for example, are generally held to a higher duty of care because of their expertise and the trust placed in their work. Homeowners or untrained individuals may also have a duty of care in maintaining their electrical systems.

3. Code Compliance: Compliance with electrical codes and regulations is critical. Failing to adhere to applicable standards may be considered negligence and can lead to liability if an electrical accident occurs. Electrical codes are in place to promote safety, and violations can be evidence of negligence.

4. Causation: To establish personal liability, it must be proven that the actions or inactions of the individual directly caused the electrical accident. There should be a clear link between their behavior and the resulting harm.

5. Foreseeability: Liability can also hinge on whether the accident was foreseeable. If the person should have reasonably foreseen that their actions could lead to an accident or injury, they may be held liable for not taking appropriate precautions.

6. Contractual Obligations: In some cases, individuals may have contractual obligations related to electrical work. For example, electricians hired to perform a job may have contractual agreements that outline their responsibilities and liabilities.

7. Insurance Coverage: Liability can be influenced by the presence of insurance coverage. Professionals often carry liability insurance to protect themselves from legal claims resulting from accidents. Homeowners may have homeowner's insurance that covers certain electrical accidents. The availability of insurance can affect how claims are resolved.

8. Indemnification: In some cases, individuals or entities may have indemnification agreements in place that can shift liability to another party. For example, a contractor may have an agreement with a subcontractor that stipulates how liability will be allocated in the event of an electrical accident.

9. Contributory or Comparative Negligence: In some jurisdictions, the concept of contributory or comparative negligence may apply. These legal doctrines consider the degree to which each party involved in an accident contributed to the incident when determining liability and compensation.

10. Legal Defenses: Individuals facing liability claims can also mount legal defenses, such as claiming that they followed industry standards, had no control over the circumstances leading to the accident, or that the injured party assumed the risk.

It's important to note that the specifics of personal liability in electrical accidents can be complex and subject to the laws and regulations of the jurisdiction in question. Legal matters involving electrical accidents should be addressed by qualified legal professionals who can provide guidance based on the specific details of the case and applicable laws.

Who Should Attend?

HVAC Contractors & Technicians

This workshop will provide HVAC contractors and technicians a better understanding and correlation of the requirements in NFPA NEC, Article 440, covering air conditioning and refrigeration equipment, concerning sizing of overcurrent protective devices protecting the units with the requirements for sizing grounding and bonding conductors in 250.122(D). Oversizing the overcurrent protective devices and undersizing the equipment grounding and bonding conductors could cause major safety issues with residential, commercial, and industrial installations. HVAC professionals should be well-versed in grounding and bonding practices and incorporate them into their installations and maintenance procedures for these key reasons:

1. Electrical Safety: Grounding and bonding help prevent electrical shock hazards and reduce the risk of electrical fires. When HVAC equipment is properly grounded and bonded, it provides a safe path for electric current to follow in case of a fault, preventing electrical shock to both HVAC technicians and occupants.

2. Code Compliance: Electrical codes and regulations, such as the National Electrical Code (NEC) in the United States, require proper grounding and bonding of electrical systems, including those used in HVAC installations.

Compliance with these codes is essential to avoid legal and safety issues.

3. Protection of Electronic Components: Modern HVAC systems often contain sensitive electronic components. Grounding and bonding help protect these components from electrical surges and static discharge, which can damage or disrupt the operation of the system.

4. Lightning Protection: HVAC systems are vulnerable to lightning strikes, which can cause significant damage. Proper grounding and bonding systems can help divert lightning strikes away from sensitive equipment, reducing the risk of damage or system failure.

5. Minimizing Interference: Grounding and bonding can reduce electromagnetic interference (EMI) and radio frequency interference (RFI) in HVAC systems. These interferences can affect the performance of HVAC equipment, such as thermostats, sensors, and control systems.

6. Maintaining Equipment Efficiency: Proper grounding and bonding ensure the reliable operation of HVAC equipment. Ground faults or uncontrolled electrical currents can lead to inefficiencies and increased energy consumption.

7. Avoiding Corrosion: Grounding and bonding can help prevent galvanic corrosion in HVAC systems.



When dissimilar metals are in contact, corrosion can occur, leading to equipment deterioration and reduced service life. Proper grounding and bonding techniques can mitigate this issue.

8. Equipment Protection: Grounding and bonding systems provide protection for HVAC equipment against voltage fluctuations, power surges, and electrical disturbances. These measures extend the lifespan of HVAC units and minimize the need for repairs and replacements.

9. Liability Reduction: Proper grounding and bonding help HVAC contractors avoid liability in case of electrical accidents or equipment failures. By following industry standards and codes, contractors demonstrate a commitment to safety and professionalism.

10. Peace of Mind: Implementing effective grounding and bonding practices in HVAC installations provides peace of mind for both contractors and customers. It ensures that the system is safe, reliable, and compliant with regulations.

Who Should Attend?

ELECTRICAL INSPECTORS

Grounding and bonding are of paramount importance to electrical inspectors because they are central to ensuring the safety and compliance of electrical systems. Inspectors play a crucial role in verifying that electrical installations meet established codes and standards. Grounding and bonding are critical components of these standards, as they help prevent electrical hazards, minimize the risk of shocks and fires, and ensure the proper functioning of electrical systems. By thoroughly assessing the grounding and bonding practices in a given installation, inspectors can confirm that electrical systems are not only safe but also reliable and compliant with the necessary regulations, ultimately safeguarding public safety and reducing the potential for electrical accidents and failures.

A thorough understanding of Article 250, covering Grounding and Bonding, is especially important for electrical instructors for trade schools, junior colleges, and other educational facilities since Article 250 is the basis of our electrical safety. School maintenance personnel are often asked to connect new electrical equipment into existing buildings so a thorough knowledge of the requirements in the NEC and Article 250 are necessary for the safety of the students as well as the buildings.

The liability of an electrical inspector who approves an incorrect installation resulting in damage or death can vary depending on the specific laws and regulations in the jurisdiction where the inspection occurred. In general, an electrical inspector's liability can be influenced by several factors:

1. Legal and Regulatory

Framework: The liability of an electrical inspector is often determined by the legal and regulatory framework in place in the jurisdiction where the inspection took place. Different regions have different laws and regulations governing the responsibilities and liability of inspectors.

2. Professional Standards: Electrical inspectors are typically expected to adhere to professional standards and codes of conduct in their field. Failure to meet these standards can result in professional disciplinary actions, such as license suspension or revocation.

3. Negligence: Liability may arise if an inspector is found to have been negligent in their duties. Negligence occurs when an inspector fails to exercise the standard of care and diligence that a reasonable and prudent inspector would have exercised in similar circumstances.

4. Documentation and Records: Inspectors are often required to maintain thorough records of their inspections, including their findings, approvals, and any concerns or issues identified during the inspection. Inadequate record-keeping can potentially increase an inspector's liability.

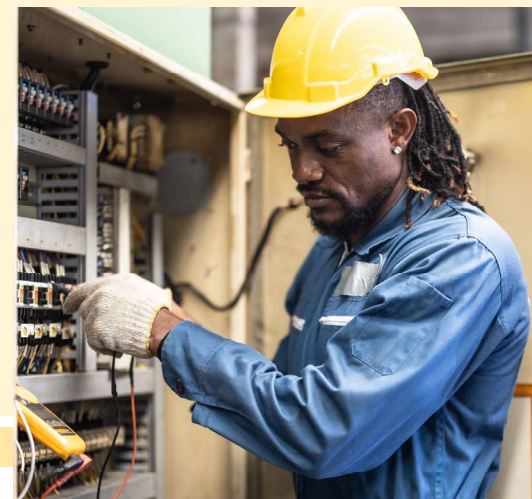
5. Causation: To establish liability, it must be demonstrated that the incorrect approval directly caused the damage or death. If there are other intervening factors or parties involved, liability may be shared or apportioned accordingly.

6. Immunity and Protections: In some cases, inspectors may have legal immunities or protections

that shield them from personal liability, especially when they are acting in accordance with their official duties and within the scope of their authority. These protections can vary by jurisdiction.

It's important to note that the legal liability of an electrical inspector may be determined through a legal process, including investigations, lawsuits, and court proceedings. Liability can also depend on the specific circumstances of the case, the extent of the damage or injury, and whether the inspector's actions or inactions directly contributed to the adverse outcomes.

If an electrical inspector is found to have acted negligently or improperly, they may face legal consequences, including civil liability, professional discipline, and potential criminal charges. Affected parties or their families may pursue legal action to seek compensation for damages or loss of life resulting from the incorrect inspection approval.



RESIDENTIAL AND ELECTRICAL CONTRACTORS

Electrical contractors and residential contractors may find attending a grounding and bonding seminar beneficial for several key reasons:

For Electrical Contractors:

1. Stay Informed on Industry Standards: Seminars provide updates on the latest industry standards and regulations related to grounding and bonding. Electrical contractors can stay informed about changes that may impact their work.

2. Enhance Safety Practices: Learn about advanced safety practices and techniques in grounding and bonding. This knowledge is crucial for ensuring the well-being of both workers and the end-users of electrical systems.

3. Improve Compliance and Code Adherence: Stay abreast of the latest electrical codes and regulations. Understanding and implementing proper grounding and bonding practices are essential for compliance with industry standards.

4. Address Advanced Techniques and Technologies: Explore advanced techniques and emerging technologies related to grounding and bonding. This knowledge can enhance the contractor's skill set and enable them to implement the latest innovations in their projects.

5. Networking Opportunities: Seminars offer networking opportunities with experts, fellow

contractors, and industry professionals. This can lead to valuable collaborations, partnerships, and the exchange of best practices.

6. Liability Mitigation: Gain insights into strategies for reducing liability in electrical projects. Understanding legal aspects and best practices in grounding and bonding can help contractors mitigate risks and protect their businesses.

7. Operational Efficiency: Learn about practices that contribute to the reliable operation of electrical systems. This knowledge can help electrical contractors minimize disruptions, reduce downtime, and enhance the efficiency of their projects.

For Residential Contractors:

1. Ensure Homeowner Safety: Understand the importance of grounding and bonding for homeowner safety. Residential contractors can learn how to implement these practices to create a secure environment for homeowners and occupants.

2. Code Compliance in Residential Construction: Stay informed about specific grounding and bonding requirements in residential construction. Compliance with residential codes is essential to ensure the safety and legality of electrical installations.

3. Protect Home Electronics and Appliances: Learn techniques to protect household electronics and appliances from electrical damage. This knowledge is crucial for preserving the longevity and proper functioning of devices within residential settings.

4. Fire Prevention in Homes: Gain insights into how proper grounding and bonding contribute to fire prevention in homes. This is particularly relevant for residential contractors working on projects where fire risks need to be minimized.

5. Energy Efficiency in Residential Electrical Systems: Understand how grounding and bonding contribute to energy efficiency in residential electrical systems. This knowledge can help contractors optimize energy consumption, benefiting homeowners in the long run.

6. Networking and Collaboration: Attendees have the opportunity to network with other professionals in the residential construction industry. Building connections with experts and peers can lead to collaborations and shared insights.

7. Efficient Project Execution: Learn practices that contribute to efficient project execution. This includes minimizing disruptions, reducing the likelihood of electrical issues, and ensuring that residential projects are completed reliably and on schedule.

In conclusion, attending a grounding and bonding seminar provides contractors with the knowledge and tools necessary to enhance safety practices, stay compliant with codes, adopt advanced technologies, and foster professional connections in their respective fields.

Who Should Attend?

GOVERNMENT FACILITY MANAGEMENT

Grounding and bonding are critical for the maintenance of government facilities to ensure safety, compliance, and the reliable operation of electrical systems. Neglecting these aspects can result in safety hazards, legal issues, equipment damage, and disruptions to essential government functions and services. Therefore, government agencies must prioritize and maintain proper grounding and bonding practices as part of their maintenance and safety measures.

ENGINEERS

Bonding and grounding are the keys to unlocking a world of safety, compliance, protection, and innovation. These practices form the backbone of electrical systems, ensuring not just compliance but also enabling cutting-edge technologies to thrive. By mastering the art of bonding and grounding, engineers fortify the reliability of critical infrastructure, protect against electrical anomalies, and pave the way for groundbreaking advancements. It's the indispensable knowledge that transforms challenges into opportunities, making engineers the architects of a future where connectivity is secure, and technology operates at its full potential.

TRADE SCHOOL INSTRUCTORS

A thorough understanding of Article 250, covering Grounding and Bonding, is especially important for electrical instructors for trade schools, in junior colleges and other educational facilities since Article 250 is the basis of our electrical safety. School maintenance personnel are often asked to connect new electrical equipment into existing buildings so a thorough knowledge of the requirements in the NEC and Article 250 are necessary for the safety of the students as well as the buildings.



DATA CENTERS AND IT PROFESSIONALS

In the dynamic realm of data centers, bonding and grounding play a pivotal role in safeguarding the heart of digital operations. These practices are the bedrock of electrical safety, protecting sensitive equipment from surges and ensuring uninterrupted connectivity. By fostering a secure environment, bonding and grounding not only mitigate the risk of costly downtime but also enhance the overall reliability and efficiency of data center operations. In an era where data is the lifeblood of enterprises, investing in robust bonding and grounding practices is not just a necessity—it's a strategic imperative for sustaining peak performance and data integrity.

FIREFIIGHTERS AND FIRST RESPONDERS

Training and education in grounding and bonding practices are critical for firefighters and first responders to safely manage electrical hazards and ensure their safety while providing emergency services. It's essential for these professionals to have a thorough understanding of electrical safety protocols and to incorporate them into their emergency response procedures.



The Summerville Historic District is a national historic district that encompasses 700 contributing buildings in the village of Summerville. Many of the buildings predate World War I and include raised cottages, Greek Revival influenced, and Victorian / Queen Anne and other turn of the 20th century structures. Take a leisurely stroll through Azalea Park to appreciate nature's beauty and wildlife, attend a performance at the Flowertown Players theatre, or explore the local shops around Hutchinson Square for unique gifts. When it comes to dining and beverages, you'll find a diverse selection to suit all tastes.

A few minutes down the road from Summerville's historic district you will find the Nexton Square. Here, you'll uncover an exceptional assortment of shops and boutiques, along with plenty of eateries to satisfy any appetite, including Halls Chophouse.

Quaint Charleston is less than a 30 minute drive from Summerville. Enjoy the beautiful and historic sites of Charleston, along with some of the finest Southern cuisine and best shopping in the region.

Bring your family and enjoy the weekend exploring the area!

Who Should Attend?



INDUSTRIAL FACILITY PERSONNEL

Many industrial facilities utilize a combination of electrical maintenance personnel and electrical contractors to install new manufacturing equipment and to maintain older equipment through reconditioning and modification. Facilities electrical maintenance crews are often used to supervise the work of electrical contractors with the industrial plant so a thorough understanding of the NEC, and especially Article 250 for grounding and bonding is a definite must for those personnel. Many large industrial facilities have areas involving hazardous (classified) locations in their manufacturing process so understanding the principles of bonding requirements in 250.100 is a critical safety issue.

Grounding and bonding are critically important in industrial and manufacturing facilities for various reasons, primarily related to safety, equipment protection, and the prevention of electrical hazards. Here's why grounding and bonding are crucial in these settings:

- 1. Electrical Safety:** Industrial facilities, known for their substantial electrical loads and intricate systems, rely on comprehensive measures to manage electrical faults, averting shock hazards and mitigating fire and explosion risks.
- 2. Personnel Safety:** Prioritizing the well-being of employees, contractors, and visitors, these safety measures create a secure path for fault currents, minimizing the potential for injury or fatality during electrical faults.
- 3. Compliance with Regulations:** Industrial and manufacturing sites, governed by an array of

electrical codes and regulations, adhere to standards such as the National Electrical Code (NEC) in the United States, ensuring both safety and legal compliance in electrical installations.

- 4. Equipment Protection:** Safeguarding sensitive electrical and electronic equipment from surges, fluctuations, and static discharge, these systems contribute to prolonged machinery lifespan, curbing equipment downtime due to electrical damage.
- 5. Fire Prevention:** Mitigating the risk of electrical fires, these measures ensure that faults don't spark or overheat connections, particularly crucial in environments with flammable materials.
- 6. Protection Against Lightning:** Acknowledging the susceptibility of industrial facilities to lightning strikes, these systems efficiently channel lightning energy into the ground, reducing damage and electrical surges.
- 7. Corrosion Mitigation:** In moisture-exposed environments, proper practices prevent galvanic corrosion by maintaining consistent electrical potential across metal components.
- 8. Equipment Efficiency:** Enhancing the reliability and efficiency of industrial machinery, these measures address inconsistent electrical connections and grounding issues, curbing equipment malfunctions and downtime.
- 9. Liability and Insurance:** Adhering to sound practices reduces liability in electrical incidents or equipment failures, potentially impacting insurance premiums by showcasing a commitment to safety.

EDUCATIONAL FACILITIES & MAINTENANCE PROFESSIONALS

Grounding and bonding stand as indispensable pillars in the electrical landscape, especially within educational institutions, where their paramount importance cannot be emphasized enough. These foundational practices serve as the linchpin for safety and operational excellence, permeating diverse systems, from lighting and power distribution to the intricate electronic apparatus prevalent in modern classrooms. Upholding meticulous grounding and bonding in educational facilities not only safeguards the well-being of students, faculty, and staff but also shields valuable equipment investments.

Moreover, it curtails the likelihood of electrical mishaps, ensuring an uninterrupted educational flow. In this context, grounding and bonding emerge not merely as technical prerequisites but as the very foundations fostering a secure and conducive learning environment.

Significance of Grounding and Bonding in Educational Facilities:

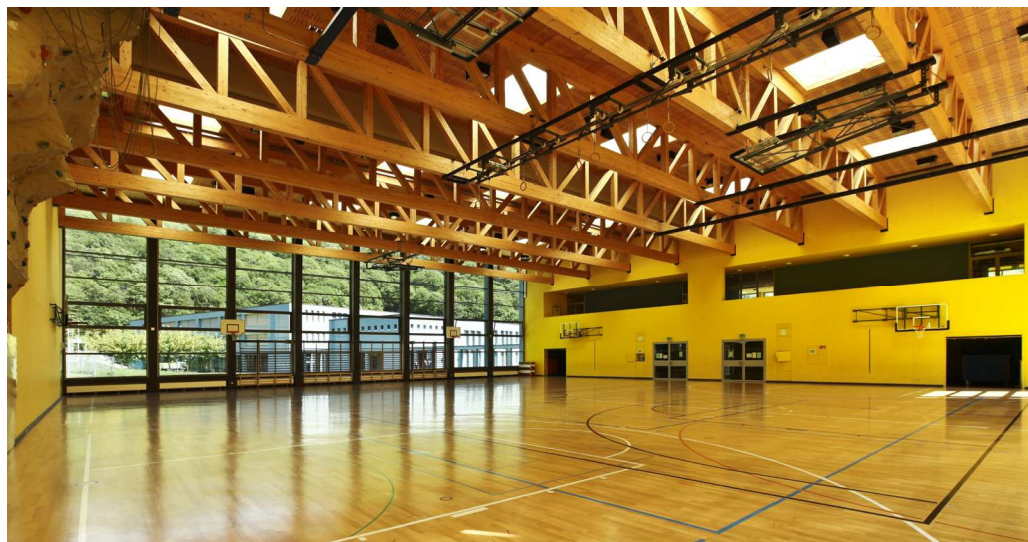
- 1. Safety Assurance:** Grounding and bonding are vital for occupants' safety in educational facilities, averting electrical shock hazards and reducing fire risks, fostering a secure learning and working environment.

- 2. Code Adherence:** Educational facilities must comply to strict electrical codes such as the National Electrical Code (NEC) in the U.S., imperative for meeting legal requirements and ensuring occupants' safety.

- 3. People, Property, and Equipment Protection:** Acting as conduits for fault currents, grounding and bonding divert electrical energy away from individuals, equipment, and structures. This protective measure minimizes the potential for electrical injuries and property damage, and shields devices, such as computers and AV equipment, from electrical surges and spikes that could otherwise disrupt educational activities.

- 4. Fire Prevention:** Proper grounding and bonding substantially reduce the risk of electrical fires by preventing overheating and sparking at electrical connections. This is particularly crucial in educational settings to safeguard lives and property.

- 5. Lightning Protection:** While infrequent, lightning strikes pose a substantial threat to educational facilities. Proper grounding and bonding systems effectively channel lightning energy into the ground, diminishing the risk of electrical surges, fires, and equipment damage.



Who Should Attend?

POOL INSTALLERS

Grounding and bonding are of paramount importance for pool installers due to the unique electrical safety challenges associated with swimming pools. These measures protect against electrical shocks, corrosion of equipment, and legal liabilities. They ensure compliance with regulations, safeguard pool users, and provide peace of mind for both installers and pool owners, making them integral components of safe and reliable pool installations.

Grounding and bonding are vitally important for pool installers due to the unique electrical and safety considerations associated with swimming pools and their surrounding areas. Here's why grounding and bonding are crucial for pool installers:

- 1. Electrical Safety:** Pools and their vicinity often have a significant presence of water, which is a conductor of electricity. In the event of an electrical fault or equipment malfunction, there's a high risk of electrical shock or electrocution. Proper grounding and bonding measures help prevent these hazards by ensuring that stray electrical currents are safely directed to the ground.
- 2. Equipment Protection:** Pools and spas are equipped with various electrical components,

such as pumps, heaters, and lighting systems. These devices are susceptible to corrosion and damage from water exposure. Effective bonding can protect these electrical components from deterioration, extending their lifespan and reducing maintenance costs.

3. Compliance with Codes and Regulations:

Most regions have stringent electrical codes and regulations governing pool installations. These codes often require specific grounding and bonding practices to ensure the safety of pool users. Pool installers must adhere to these standards to avoid legal liabilities and ensure their installations meet safety requirements.

- 4. Minimizing Stray Currents:** Proper grounding and bonding help prevent the occurrence of stray electrical currents in and around the pool area. Stray currents can cause corrosion of metal components, such as pool ladders and handrails, which can compromise their structural integrity and safety.

- 5. Protecting Pool Users:** Swimming pool users, especially children, are at risk of electric shock if the pool and its surroundings are not adequately



grounded and bonded. Pool installers play a crucial role in safeguarding the lives of those who will enjoy the pool by implementing these safety measures.

- 6. Insurance and Liability:** Insurers may require that pool installations meet specific safety standards, including proper grounding and bonding. Non-compliance could result in voided insurance policies or increased premiums. Additionally, failure to implement grounding and bonding measures can expose pool installers to legal liability in the event of accidents or injuries.

HEALTHCARE FACILITIES & MAINTENANCE PERSONNEL

Attending this seminar on grounding and bonding may at first seem unconventional for someone in the healthcare facility maintenance sector, but the importance of these principles in healthcare infrastructure cannot be underestimated.

Healthcare facilities management requires a special understanding of the NFPA NEC Code including Article 250, covering Grounding and Bonding, to prevent the occurrence of a conductive or capacitive path from the patient's body to some grounded object. That path for current flow could occur accidentally or through healthcare equipment and electrical instruments that are directly connected to the patient.

Grounding and bonding play a pivotal role in maintaining the safety and reliability of the complex electrical systems that power modern healthcare facilities. From life-saving medical equipment to sensitive electronic health records, hospitals and healthcare institutions rely heavily on electricity. Proper grounding and bonding not only ensure the safety of patients and healthcare professionals but also effectively minimize the risk of electrical malfunctions that could disrupt critical medical procedures or compromise patient data.

As more electrical equipment contacts the patient or is connected to the patient, the patient may have multiple sources of electrical current introduced into the body. For this reason, this course will provide information on the uses of isolated power systems, and separate grounding systems to reduce or eliminate harmful currents through the body.

Here are several key reasons why grounding and bonding are crucial for healthcare professionals:

- 1. Patient Safety:** In healthcare, patient safety is the top priority. Grounding and bonding help prevent electrical faults and reduce the risk of electrical shocks, which could harm patients undergoing medical procedures or receiving treatment. It ensures that medical equipment operates reliably and safely.

- 2. Reliability of Medical Equipment:** Many medical devices and equipment, such as MRI machines, X-ray equipment, and life support systems, rely on sensitive electronic components. Proper grounding and bonding help maintain the reliability of these devices, ensuring they function correctly when needed most.

- 3. Data Integrity:** Electronic health records (EHRs) and medical information systems are essential for patient care and record-keeping. Grounding and bonding help protect these systems from electrical interference and damage, safeguarding patient data and medical records.

- 4. Minimizing Disruptions:** Healthcare facilities operate 24/7, and any electrical disruption can be life-threatening. Adequate grounding and bonding minimize the risk of power surges, outages, or equipment failures that could interrupt critical medical procedures or patient care.

- 5. Compliance with Regulations:** Healthcare facilities are subject to strict regulations and codes regarding electrical safety. Compliance with these regulations, such as those set forth by organizations like the National Electrical Code (NEC) and the Joint Commission, is essential. Proper grounding and bonding are key elements in meeting these standards.

- 6. Fire Prevention:** Grounding and bonding help prevent electrical fires, which can be particularly devastating in healthcare settings where patients are often unable to evacuate easily. Minimizing fire risks is critical for protecting both patients and staff.

- 7. Liability Reduction:** Ensuring that grounding and bonding systems are in place and regularly maintained can reduce the liability of healthcare institutions. It demonstrates a commitment to safety and can mitigate legal consequences in case of electrical accidents.

- 8. Cost Savings:** Proper grounding and bonding can extend the lifespan of medical equipment, reduce downtime, and minimize repair and replacement costs. It also helps control energy consumption, contributing to cost savings in the long run.



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DON'T MISS THIS GREAT OPPORTUNITY!

JOIN US FOR OUR EXCLUSIVE

2024 ACES ELECTRICAL INDUSTRY TRADESHOW!

FOLLOWING THE SEMINAR

4PM - 7PM

**OVER-THE-TOP FOOD,
GREAT BEVERAGES,
FANTASTIC DOOR PRIZES & A
GRAND PRIZE DRAWING
TO TOP IT OFF.**

We are bringing together our premier manufacturing partners and local agency reps to provide you with an array of the most up to date products and resources all under one roof. At this FREE trade show, learn about the latest technology and trends to maximize time and profit while you network with colleagues, suppliers and our ACES team. Over 40 exhibitors will showcase their latest and most innovative products and services, including Bonding & Grounding items.

Must be present to win prizes. Manufacturers, vendor representative agencies, direct competitors, and ACES associates, including immediate family members of all, are not eligible to participate and/or win prizes.



Registration required for all Trade Show participants. Those attending the ACES Bonding & Grounding Seminar are automatically registered for the show.

FEATURED MANUFACTURERS WILL INCLUDE:

ABB

AcuityBrands™

Atkore

ENCORE WIRE™

HARGER®

legrand®



RAB®

SIEMENS

AND DOZENS MORE!

Registration Form



Company Name _____ Title _____
ACES Commercial Account Number _____ # of Attendees _____
Address _____
Email _____ Phone _____

Do you need CEUs? Note: If applying for credit towards CEUs, please print name as appears on license.

North Carolina

Att. #1 Name _____ License Number _____ Last 4 digits of SSN _____
Att. #2 Name _____ License Number _____ Last 4 digits of SSN _____
Att. #3 Name _____ License Number _____ Last 4 digits of SSN _____

Georgia

Att. #1 Name _____ License Number _____
Att. #2 Name _____ License Number _____
Att. #2 Name _____ License Number _____

South Carolina

Inspectors or Code Enforcement Officer _____
Att. #1 Name _____ SC LLR number _____
Att. #2 Name _____ SC LLR number _____
Att. #3 Name _____ SC LLR number _____

Do you have any food allergies or have ADA needs or need special accommodations? If so, please describe: _____

Are you a member of CECA? Yes No

How did you hear about this event?

My ACES Associate ACES location Mail Brochure/Flyer Email Social Media Mike Holt Enterprises website Co-Worker

Other _____

Merchandise

___ NFPA 2020 National Electrical Code Handbook (softbound) (\$149.99)
___ NFPA 2020 National Electrical Code Handbook Self Adhesive Tabs (\$34.99)
___ NFPA 2023 National Electrical Code Handbook (softbound) (\$149.99)
___ NFPA 2023 National Electrical Code Handbook Self Adhesive Tabs (\$34.99)

Price:

Now - April 7th: \$499/person | Registration After April 7th: \$599/person
10% Volume Discount with 3 or more people

Registration Cost

of attendees _____ X rate of \$ _____ per person = _____

-10% group discount of 3 or more = \$ _____

Materials

of Handbooks _____ X \$ 149.99 = _____

of Self Adhesive Tabs _____ X \$ 34.99 = _____

Grand Total: _____

Crowd Notice/Release

Please be aware that by attending this event, you consent to your voice, name and/or likeness being used, without compensation, in all media, whether now known or hereafter devised, for eternity, and you release Atlantic Coast Electric Supply, its successors, assigns, subcontractors and licensees from any liability whatsoever of any nature.

Seminar Cancellation Policy:

A \$25 fee will be charged for any cancellations made by March 31, 2024. After March 31, 2024, cancellations will be refunded at 50%.

Method of Payment:

ACES Commercial Account Account # _____

Check (enclosed)

Credit Card Visa Amex MC

Name _____

CC Number _____

Expiration Date _____ CVC _____

Questions? Call Joan Davis 703-403-7119

Scan and email to
EPICMeetings@gmail.com or
mail to EPIC Meetings,
21279 Victorias Cross Terrace,
Ashburn, VA 20147

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c/o EPIC Meetings
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BONDING & GROUNDING SEMINAR 2020 NFPA | NEC



Atlantic Coast Electric Supply™ is a Carolina's based independent electrical distributor. We proudly serve the markets in and around Charleston, Columbia, Greenville, SC and Concord, NC. With decisions made locally, we are able to focus specifically on the needs of our customers, reacting quickly to your requests and project needs. From product lines and delivery options to counter locations and project management services, we can support every aspect of your project.

Our priority is to go above and beyond our customers' expectations to deliver top-quality electrical products and solutions. This is at the heart of our business, and it's something we take great pride in. We leverage the vast experience of our team, coupled with our broad range of products, to ensure that we remain your preferred partner. With a dedication to excellence and an unrelenting focus on delivering results that meet your needs, we are confident that we can provide you with the outstanding service you deserve.

We carry a full line of electrical products from some of the leading manufacturers in the industry. Brands you recognize and trust such as: Siemens, Legrand, ABB, Atkore, Encore, Acuity, Lutron, Satco, IDEAL, Milwaukee, and RAB to name a few.