

Master Your Craft: Safety Training in Construction



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About me

- Director of Safety and Risk at Paul Dinto Electrical Contractors, Inc.
- Formerly COO & President of Flagship Electrical & Telecom, LLC
- Licensed Professional Educator for Career Technical Education
- Licensed Electrical Contractor since 2001
- Licensed Electrical Codes Inspector since 2012
- Certified Technology Manager from ATMAE since 2019
- Authorized OSHA 500 trainer since 2011, OSHA 502 since 2014
- Certified Electrical Safety Compliance Professional for NFPA 70E since 2012
- BSc from CCSU Industrial Technology, Technology Management
- MBA '22 & Dean's Merit Scholar at The Johns Hopkins University
- Safety Consultant and content developer for CMs, FMs, and MEP contractors
- Safety Committee member for CT Construction Industry Association

Activity Groups

- Break into Group 1 and Group 2

Overview

- After this session, students will be able:
 - Describe why construction safety training is critical
 - Describe the role of the Construction Manager in safety training
 - Identify which safety tasks require certifications
 - Hold subcontractors accountable for their safety programs and associated employee training

Find 25 safety violations



A political cartoon by L. L. RICHMOND. The scene is a construction site. A man is perched high on a ladder, drinking from a bottle. Above him, a sign reads "SAFETY PAYS". On the ground, another man, wearing a hard hat and a shirt with "JOE" on it, is using a high-pressure hose to spray water at a large, dark, leaking barrel. A sign on the wall nearby says "WE HAVE WORKED 3 DAYS WITHOUT AN ACCIDENT". A sign on the door of the building says "DO NOT BLOCK". In the background, two other workers are visible near a pile of debris. The cartoon is signed "L. L. RICHMOND" in the bottom right corner.

- Crane too close to power lines
- Man riding crane load
- No shoring in trench
- Spoils too close to trench edge
- Dozer filling trench with men in trench
- No barricades on trench
- Poor housekeeping- nails
- Hazardous material leaking
- Smoking next to flammable/explosive material
- Spliced extension cord
- Extension cord in water
- Splice on ladder rail
- Improper positioning of ladder over doorway
- Improper feet on ladder
- Ladder not tied off
- Broken ladder rung
- Shoes on ladder man
- Hard hat on ladder man
- Bucket on wall edge
- Working over safety inspection
- Improper angle on ladder
- Extra cord- potential trip hazard
- No tag line in use
- Ladder doesn't extend 3 feet past landing
- No ladder in trench for access/egress

Why is safety important on the construction site?

- Danger to life and limb

- Costly to the project

- Damage to equipment and assets

- High Workers Compensation rates

- Reputational damage

- Possible OSHA fines

- Damages employee morale which increases safety issues

Obstacles to Safety on the jobsite

- Project deadlines
- Costs not included in the bid/ estimate
- Complacency in the workforce
- Complacency from the site supervision team
- Poor training
- How do we overcome that?
- Safety Training!

Safety in construction

Activity 1: (Group 1: Take 5 minutes to write these down)

List seven or more construction activities that you think your general labor employees need training for:

Activity 2: (Group 2: Take 5 minutes to write these down)

List seven or more construction activities that you think your subcontractors' employees need safety training for:



Activity 1 - What to expect from the general labor employees?

- Hazard assessments
- Selection of personal protective equipment
- First Aid/ CPR/ Emergency egress
- Use of hand and power tools
- Working at heights (ladders, lifts, scaffolds)
- Use of motorized equipment
- Working in excavations
- Asbestos Awareness
- Working with Lead
- Can you think of any others?

Activity 2 – training to expect from subs

- Trade-specific training
- Hazard assessments
- Selection of personal protective equipment
- First Aid/ CPR/ Emergency egress
- Lockout - Tagout
- Use of hand and power tools
- Working at heights (ladders, lifts, scaffolds)
- Use of motorized equipment
- Working in excavations
- Asbestos Awareness
- Working with Lead
- Can you think of any others?

OSHA Training Guides

- Fall Protection
- Hazard Communication Safety Data Sheets
- Scaffolding
- Confined Spaces
- Excavations
- Electrical Safety
- Hazardous Energy Control (Lockout – Tagout)
- Motorized Elevating Working Platforms, or MEWPs
 - Scissor lifts
 - boom lifts, cherry pickers

Examples of MEWPs



Image from www.agc-gm.org

What training is required in the skilled trades?

Obvious that skilled trades workers require subject matter training.

Take 3 minutes to list what you think is needed for electricians, plumbers, HVAC/R technicians, and sheet metal workers.

According to CGS 20-332, licensed trades require:

- A bona fide apprenticeship
 - (between 8000 – 10,000 hours)
 - (~2000 hours of theory, codes, and OSHA 30)
- Testing at the end of the apprenticeship for Journeyperson
 - Usually a proctored 3 hours test
- After 2 years, a Journeyperson can apply to the Board to sit for the master level Unlimited Contractors exam.
 - Usually a six-hours test of theory, codes, OSHA, and CT business laws

Licensing in safety

Question:

Does licensing automatically make one a Qualified Person in Safety?

Why? Or Why not?

- Licensing can, but does not always, make an employee Qualified in a specific safety task.

Licensing (cont.)

- Licensing can, *but does not always*, make an employee Qualified in a specific safety task.
- **“Licensed”** means that a skilled tradesperson can install systems and components according to code. (CGS chap 39, Sec. 20-332)
- **“Qualified”**, in the safety context, means that the person has been trained and has retained that training to work safely. (OSHA 1926.32(m))
- **“Competent person”** means that a person has been trained to recognize the hazards associated with a work task and has the authority to direct prompt corrective actions. (OSHA 1926.32(f))
- These are not the same but are complementary. Each requires special training.

Employer responsibility

- Employers are responsible for ensuring the training and designation of a Competent Person.
- Employers are responsible for the training and designating a Qualified Person.
- Employers are responsible for hiring appropriately licensed (and apprenticed) workers.

Employee responsibility

- Employees are responsible for obtaining their license and completing annual CEUs to maintain it.
- Employees are responsible for maintaining their Qualified Person designation or requesting retraining.
- A word on CEUs (certified education units). CEUs are not a replacement for training or personal development. CEUs are too broad and are used to maintain a license.

Site leadership training

In our field site leaders can be the following:

- Superintendent
- General foreperson
- Foreperson
- Sub-foreperson
- Lead-person

Each role requires exposure training to principles studied in

- Construction Management
- Project Management
- Safety Management
- Risk Management
- Documents Management
- Human Resources

Benefits of a competency training program

- Improves your chances for on-time-delivery
- Better quality projects
- Safer workforce
- Fewer errors and punch list items
- Loyalty from your workers
- Good reputation with clients
- Promotes diversity, equity, and inclusion initiatives ★

Next Level training

- In the next few years, construction managers will be tasked with fulfilling a company's environmental, social, and governance (ESG) initiatives.
- Fortune 500 companies, private universities, utility companies, and Venture Capitalists are steering business to construction firms that demonstrate a robust ESG program.
- Construction sites such as Yale, Sikorsky, Pratt & Whitney, AVANGRID, Alexion, Pfizer, Travelers, and several municipalities have these requirements in their contracts already.
- CMs, FMs, and PMs will see more of these requirements in contracts and will have to submit compliance reports.

More training opportunities

- More industries are incorporating LEAN construction methods, especially during the supply chain crunch
- It is not uncommon to see sites require Six Sigma or 5S concepts on job sites.
- Be sure to include anti-harassment and anti-bullying training for your workforce, at all levels.

An often-ignored training opportunity

- Diversity, Equity, and Inclusion (DEI).
 - According to the Associated General Contractors of America (2019) report on the Bureau of Labor Statistics, the construction industry is among the worst in diversity.
 - U.S. population is ~50% White, but construction is 63% White.
 - Women are only 9% of the total construction industry and only 2.7% are on site.
 - Construction management for Black Americans is worse with only 3% as supervisors; safety management is even lower.
- However, several studies show “that diverse companies had 2.3 times higher cash flow... than non-diverse companies did” and inclusion improves a company’s safety culture (Wittenberg, 2017).
- The CMs that recognize the disparities and take steps to correct them because it’s the right thing to do (not just to fill a quota), will be profitable, have safer sites, and rapidly advance in their organizations.

Construction Managers that make the effort to recruit and train these underrepresented workers to become supervisors will be more profitable on their job sites, have fewer safety issues, and will rapidly advance in their companies.



Stock photo



Stock photo

Training “levels the field” where all workers can advance.

Conclusion

- Construction training is necessary to complete projects on time
- A trained workforce is a safe workforce
- More companies require proof of documented training
- Insurance companies and Workers Compensation can audit your training records
- If an incident happens, training records become legal documents
- Lack of training is one of OSHA's top violations
- Training a diverse workforce will improve your project deliverables and advance your career aspirations

Questions?



Contact information

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 Update

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