

OSHA Training Toolbox Talk: Basic Electrical Safety – Avoiding Open Holes in Electrical Boxes & Panels

[Reference 1910 Subpart S / 1926 Subpart K]

You may notice a broken, loose, or missing cover on an electrical receptacle or junction box. Or perhaps it's a missing "knockout" plug on the side of an electrical box. Or, you may occasionally come across an open hole in the face of an electrical breaker panel where one or more electrical breakers are missing. (*Note: refer trainees to the handout accompanying this toolbox talk for examples of these conditions.*) And sometimes it's just too easy for us to dismiss these type conditions, writing them off as too minor to be considered a serious hazard. But nothing could be further from the truth!

First of all, the electrical current lurking behind the covers over electrical boxes and panels is enough to do serious damage if someone were to accidentally come in contact with a hot wire or component; in fact, that could even be deadly. And while I am not suggesting a person would intentionally stick his or her finger in an opening into an electrical box or panel (unless it's a curious toddler), there is a very remote possibility that some way, somehow, a conductive object that a person is holding or touching could accidentally enter the opening and make contact with an energized wire or other component inside the box, resulting in quite a shock! But there are actually a few other valid reasons why we must keep all unused openings into electrical boxes and panels closed, including:

- Preventing moisture from entering into the electrical box or panel. Moisture can cause the wires and other metallic electrical components to corrode over time. And this condition could eventually lead to the wires or other electrical components to short out, or even heat up to the point that a fire could start.
- Preventing lint, sawdust, dried vegetation, and other unwanted debris from collecting inside the electrical box or panel. These combustible materials can present a fire hazard that can be ignited by a small spark should they build up inside an electrical box or panel over a long period of time.
- Preventing insects, small rodents, and even reptiles from entering electrical boxes and panels. Certain critters, like fire ants, enter electrical boxes and panels through openings while in search for food. And if one or more fire ant makes contact with the electrical current, they release a pheromone that attracts more fire ants . . . and the cycle repeats itself until the box is packed with these insects. And that can cause havoc with electrical contacts and other devices. There are even documented cases where mice or rats caused an electrical short by gnawing on the insulation covering electrical wires. Even lizards and snakes have been found lurking inside of electrical boxes and panels; not something an electrician would hope to find inside there!

So any time you notice any sort of breach or opening into an electrical box or panel, please notify your supervisor, safety rep, or electrician right away so they can arrange for a qualified person to correct the hazard. Are there any questions or comments about today's discussion? Thank you for attending today's OSHA training toolbox talk. Please be sure to sign your name on the training certification form so you will get credit for being here.

Common (& Uncommon) Safety Hazards At Electrical Boxes and Panels



Broken Cover over Receptacle



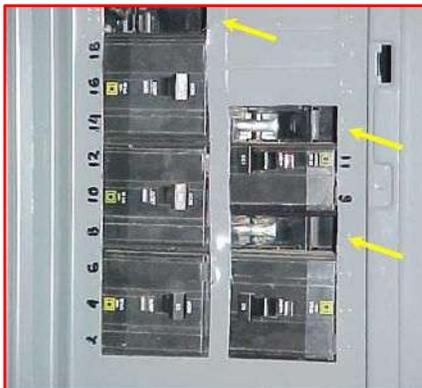
Missing Cover over Junction Box



Loose / Recessed Receptacle



Missing Conduit "Knockout"
and Loose Switchbox Cover



Open / Unused Openings in
Breaker Panel



Your Electrician's Worst Nightmare!

Source: City of Morganton NC Municipal Government