Select Edition

All Sealants, Inc.

Week of 11/8/2021

Ground-Fault Circuit Interrupters (GFCIs)

In a normal electric circuit, the current flows to a tool, appliance, or light fixture through a hot wire and back to the circuit breaker through a neutral wire. There should not be any current lost; that is, the current in the hot wire should be identical to that in the neutral wire. Any difference is dangerous because it indicates a current leak. If the leaking current flows through a high-resistance conductor or device, it could generate enough heat to start a fire. Electrical leaks can also cause a tool or appliance to become charged with electricity. If you touch the device, your body can provide the path to ground and you could suffer a serious shock. These hazards can be reduced by grounding the devices or stopping the flow of electricity when a leak is detected. Today we will talk in detail about the second option.

A ground-fault circuit interrupter (GFCI) is a device designed to protect you from electrical shock. A GFCI monitors the current in the circuit's hot and neutral conductors. If the two currents are not identical, a leak must exist. When such a leak is detected, the GFCI, which works like a fast-acting circuit breaker, will trip and shut off the power in 1/40 of a second. This eliminates the potential of you being shocked or a fire being started.

If an assured equipment grounding conductor program is not in place, then all equipment that can be plugged into a 110-volt receptacle must be protected by a GFCI. You can use a GFCI plug-in device or an electric circuit that has a GFCI built into it either at the receptacle or at the circuit breaker. To ensure that GFCIs are working properly, you should follow the manufacturer's instructions for testing.

Some of you may think that GFCIs are just a nuisance because they trip all the time. Actually, they are doing exactly what they are designed to do, which is to protect you from electrical shock. There are several conditions that will trip a GFCI. They include wet or defective power tools, improper installation, an overloaded circuit, excessive lengths of temporary wiring, and long extension cords. To avoid having a GFCI trip, inspect electric tools for damage before you use them and avoid working in wet or damp areas. And if it does trip, don't be irritated—be glad you weren't shocked!

According to OSHA, electrical shock is one of the leading causes of construction accidents. It only takes a small amount of electric current (50 milliamperes) to cause ventricular fibrillation of the heart. No one wants to be an electrocution statistic or worse yet, a fatality.

SAFETY REMINDER

Make sure electrical tools *empower* you rather than *overpower* you.

NOTES:

SPECIAL TOPICS /EMPLOYEE SAFETY RECOMMENDATIONS/NOTES:

S.A.F.E. CARDS® PLANNED FOR THIS WEEK:

REVIEWED SDS # SUBJECT:

MEETING DOCUMENTATION:

JOB NAME:

MEETING DATE:

SUPERVISOR:

ATTENDEES:

These instructions do not supersede local, state, or federal regulations.