

Location: \_\_\_\_\_ Instructor: \_\_\_\_\_ Date/Time: \_\_\_\_\_

## TOPIC C651: EXTENSION CORDS

**Introduction:** Following are guidelines to help you select the proper extension cord for the tools or equipment that you use on the job:

- Use the right extension cord. This will depend on the equipment using the cord, and the wire size or gauge of the cord. The smaller the number, the larger the wire, the greater the current; an extension cord must be large enough to handle the amount of current it needs to carry.
- The amount of current a device needs is often printed on the nameplate. If a power rating is given, you'll need to divide the power rating in watts, by the voltage, to find the current rating. A 1,000-watt heater plugged into a 120-volt circuit will need almost 10 amps of current. A 1-horsepower electric motor requires almost 750 watts, so it will need a minimum of about 7 amps of current on a 120-volt circuit. Electric motors need additional current as they startup, or if they stall, requiring up to 200% of the nameplate current rating. Therefore, the motor would need 14 amps
- Choose a wire gauge that can handle the total current. Add to find the total current needed to operate all the appliances supplied by the cord. The length of the extension cord needs to be considered when selecting the wire size. Voltage drops over the length of a cord
- When a cord is too long, the voltage drop can be enough to damage the equipment. The larger the size of the wire, the longer a cord can be without causing a voltage drop that could damage tools and equipment. Cords must be grounded to keep you safe. Use a cord with enough length to reach the power source without any additional, unneeded length.
- Never pull on cords; always disconnect a cord by the plug

**A typical extension cord grounding system has four components:**

- A third wire in the cord, called a ground wire
- A three-prong plug with a grounding prong on one end of the cord
- A three-wire, grounding-type receptacle at the other end of the cord
- A grounded outlet

**Inspect extension cords regularly using the following procedure:**

- Remove the cord from the electrical power source first; check that the grounding prong is present in the plug; check that the plug and receptacle are not damaged; clean the cord with a diluted detergent and examine for cuts, breaks, abrasions and damage in the insulation; coil or hang the cord for storage, coiling or hanging is preferred to avoid kinks, cuts and scrapes that can damage insulation or conductors

**Test extension cords regularly for ground continuity using a continuity tester as follows:**

- Connect one lead of the tester to the ground prong at one end of the cord
- Connect the second lead to the ground wire hole at the other end of the cord
- If the tester lights up or beeps, the ground wire is okay. If not, the cord is damaged and shouldn't be used
- Use electrical plugs and receptacles that are right for your needs. Connectors are designed for specific currents and voltages so that only matching plugs and receptacles will work together. This safeguard prevents a piece of equipment, a cord and a power source with different voltage and current requirements from being plugged together

**Conclusion:** GFCI protection is required on construction sites. Select the proper extension cord for safety on the job.

**Employee Attendance:**(Names or signatures of personnel who are attending this meeting)

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