Tools for Life – Weekly Health & Safety Meeting

Apollo — MECHANICAL CONTRACTORS —
Building People Who Build Great Things

Home Healthy - Home Safe

Date: July 2023

Jobsite Electrical Safety

Some form of temporary electrical power is used on most if not all construction projects. Even with greater use of battery-operated tools the batteries require recharging. Batteries may minimize the amount flexible cord use it will not eliminate the use of temporary electrical and flexible cords. This meeting we will discuss safety requirements of flexible cords, equipment grounding, ground fault protection for personnel and assured grounding program requirements.

Flexible Cords

Here are the fundamental safety requirements for using flexible cords:

- Perform a pre-use inspection, look for defects such as missing ground prong, damaged outer insulation, or evidence of potential internal damage such a pinched or crushed outer jacket.
- Strain relief connections to devices and to fittings must be in a way that the prevent tension at joints or terminal screws.
- Durability cords must be rated for hard or extra hard usage. Flexible cords will marked every foot with NEC code rating. For example, S is the code rating for extra-hard service, SJ designates hard or Junior service. In addition, the T denotes thermoplastic insulated conductors, O indicates oil resistance, and a W would indicate water and UV resistance and would be rated for outdoor use.
- Flexible cords are for temporary use only and must not be run through holes in walls, ceilings or floors, doors, windows, or similar openings.
- Sizing, at a minimum cords 50 ft and under should 14/3 AWG and lengths up to 100 ft should be 12/3 AWG.
- Extension cords shall be used only with ground fault circuit interrupters.

Equipment Grounding

- Exposed non-current carrying metal parts of cord-and-plug connected equipment shall be grounded.
- Exposed non-current carrying metal parts of fixed equipment shall be grounded except for when specifically excluded. (29 CFR 1910, Subpart S)
- Portable power tools shall be either grounded or double insulated. Double insulated tools shall be label with the double insulated mark, box withing a box.
- Extension cords shall be grounded.

Ground-Fault Protection for Personnel

On construction sites, ground-fault circuit interrupters (GFCI) shall be provided for all 105-volt, single phase, 15, 20 and 30 ampere receptacle outlets which are not a part of the permeant wiring of the building or structure. GFCI protection shall cover all cord sets, receptacles which are not part of the permanent wiring of the building or structure, and equipment connected by cord and plug which are available for use by employees.

HEALTHY OR SAFETY REMINDER: Competent Person, and OSHA competent person is defined as one who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.

Assured Grounding Program

Receptacles and cords more than 120-volts shall be part of the assured grounding program OR utilize GFCI protection. A competent person shall inspect all cords above 120-volts on a quarterly basis, before first use, after any incident that reasonably could cause damage, and after any repair. The inspection should include the following:

- Test all equipment grounding for continuity
- Test each receptacle or plug to assure the equipment grounding conductor is connected properly.
- Visually inspect each cord for damage or possible damage.

Each cord or receptacle shall be marked with the corresponding color in accordance with the following table:

Quarter	Months	Color
First	Jan – March	White
Second	April - June	Green
Third	July – Sept	Red
Fourth	Oct - Dec	Orange

Discussion Points/Quiz Questions:

1. How do you determine the rating of your electrical cords?
2. Is an assured grounding program required?
3. How do you determine if your corded electrical tool is double insulated?