

GROUNDING AND BONDING

OSHA requires an equipotential zone be established to protect workers. They describe this requirement as the use of temporary protective grounds placed at such locations and arranged in such a manner that the employer can demonstrate it will prevent each employee from being exposed to hazardous differences in electric potential. Understanding grounding and bonding will help you better implement this protection.

A reliable connection to assure the required electrical conductivity between conductive parts required to be electrically connected is considered a bond. Bonding is used to protect the employee by keeping him at the same potential.

Conducting connection, whether intentional or accidental, by which an electrical circuit or equipment is connected to earth is known as grounding. The earth is a poor conductor with resistance that does not permit sufficient fault current to flow back to the power supply. As a result, a ground rod will not serve to clear a ground fault and a dangerous touch voltage will remain if an effective ground-fault current is not provided.

Grounding and bonding actually work together. Whenever you establish personal protective grounds, make sure cables are connected to de-energized lines and equipment by jumpering and bonding with the appropriate clamps. By doing so, you will limit the voltage difference between accessible points. This will ensure safe values if lines or equipment are accidentally re-energized.

Whenever you are placing personal protective grounds, make sure of the following:

Protective grounds or “jumpers” are sized to carry the maximum available fault current. (i.e. have ampacity greater than or equal to that of No. 2 AWG copper)

- Grounds have an impedance low enough to cause immediate operation of protective devices in case of accidental energizing of the lines or equipment
- Ground are installed, lines and equipment are tested and found absent of nominal voltage using an approved method, unless a previously installed ground is present (Fuzzing is no longer an approved method of checking for absence of voltage)
- Ground-end connection is attached first, and the other end is attached by means of a live-line tool
- Grounding device is removed from the line or equipment using a live-line tool before the ground-end connection is removed



DISCUSSION QUESTIONS

What does grounding mean?

What does bonding mean?

What's the difference between the two?

What should you do whenever you are placing personal protective grounds?

Is fuzzing an approved method for check for absence of voltage?

SAFETY TALK ATTENDANCE ROSTER



COMPANY: _____ JOB/DEPT: _____

DATE: ____/____/____ TIME: _____

TOPICS ADDRESSED: _____

EMPLOYEE'S SIGNATURES:

_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

EMPLOYEE SUGGESTIONS AND RECOMMENDATIONS: _____

ACTION TAKEN: _____

Supervisor's Signature

____/____/____
Date

Safety Coordinator's Signature

____/____/____
Date