 DEE CRAMER HEATING COOLING SHEET METAL <i>Dedicated People. Delivering Quality.</i>	DEE CRAMER, INC. Safety Management System		Doc No:	ELECTGRND
			Initial Issue Date	1.1.2017
			Revision Date:	Initial Version
ELECTRICAL EQUIPMENT GROUNDING ASSURANCE			Revision No.	0
			Next Review Date:	1.1.2018
Preparation: Safety Mgr	Authority: President	Issuing Dept: Safety	Page:	Page 1 of 3

Purpose

The purpose of this program is to provide procedures and guidelines to eliminate all injuries resulting from possible malfunctions, improper grounding and/or defective electrical tools. This program applies to all sites, employees and contractors and shall be used on owned premises and all job sites.

Definitions

Competent Person - 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.

Ground Fault Circuit Interrupter - a device for the protection of personnel that functions to de-energize a circuit or portion thereof within an established period of time when a current to ground exceeds some predetermined value that is less than that required to operate the overcurrent protective device of the supply circuit.

Responsibilities

Supervisors are designated as competent persons for the Assured Equipment Grounding Conductor Program and are responsible for program execution. One or more competent persons must be designated (as defined in 1926.32(f)) to implement and execute the program.

Employees are responsible for following the requirements of this program, to perform visual inspections and to take defective equipment out of service.

Procedures and Guidelines to Eliminate Injuries from Possible Malfunctions, Improper Grounding and/or Defective Electrical Tools

The following procedures and guidelines are designed to eliminate all injuries resulting from possible malfunctions, improper ground and/or defective tools.


Assured Grounding Site Program Requirement

An assured grounding conductor program must be implemented on all Dee Cramer sites covering all cord sets, receptacles which are not part of the building or structure & equipment connected by cord and plug which are available for use or used by employees.

Ground Fault Circuit Interrupters

All 120-volt, single-phase 15 and 20 ampere receptacle outlets on construction or maintenance sites, which are not part of the permanent wiring of the building or structure and which are in use by employees, shall have approved ground fault circuit interrupters for personnel protection.

- All hand portable electric tools and extension cords shall use a GFCI.
- Additionally, approved GFCI's shall be used for 240-Volt circuits in the same service as described above.
- The GFCI must be the first device plugged into a permanent receptacle.
- The GFCI must be tested before each use by depressing the test button on the GFCI.

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Assured Equipment Grounding Conductor Program

The Assured Equipment Grounding Conductor Program (AEGCP) shall cover all cord sets, receptacles not a part of the permanent wiring of a structure and equipment connected by cord and plug on all construction and maintenance sites.

This written description of the program shall be made available for inspection and copying by MIOSHA and any affected employee.

Restrictions for Use of Equipment that Does Not Meet Requirements

Restrictions for the use of equipment that does not meet requirements or if is found to be defective shall be applied and enforced. Any equipment which has not met the requirements of this program shall not be available or permitted to be used by Dee Cramer. Damaged items shall not be used until repaired. If the equipment is not fit for purpose it shall be removed from service, red tagged and returned to the warehouse for repair/replacement.

How Often Inspection of Cords and Equipment are to be Made

Daily Visual inspections – The following shall be visually inspected before each day's use for external defects (such as deformed or missing pins or insulation damage) and for indication of possible internal damage:

- Cord sets;
- Attachment caps;
- Plug and receptacle of cord sets;
- Any equipment connected by cord and plug (with the exception of cord sets and receptacles which are fixed and not exposed to damage) such as deformed or missing plug, and
- Insulation damage
- Damaged items shall not be used until repaired or shall be discarded.
- Damaged items shall be tagged "DO NOT USE", removed from service until repaired and tested.

How and When Tests are Performed and What Records are Maintained


All equipment grounding conductors shall be tested for continuity and shall be electrically continuous.

Each receptacle and attachment cap or plug shall be tested for correct attachment of the equipment grounding conductors. The equipment grounding conductor shall be connected to its proper terminal.

When tests are performed:

- Before each use.
- Before equipment is returned to service following any repairs.
- Before equipment is used such as when a cord has been run over.
- At intervals, not to exceed 3 months.

Tests performed as required by this program shall be recorded as to the identity of each receptacle, cord set and cord and plug connected equipment that passed the test and shall indicate the last date tested or interval for which is was tested. This record shall be kept by means of logs, color coding or other effective means and shall be

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maintained until replaced by a more current record. These records shall be made available at the job site for inspection by the Assistant Secretary and any affected employees.

All tested cord sets and cord and plug-connected equipment shall be marked, one or both ends, with colored tape to denote the quarter that the tests were performed. Only the colored tape for the current quarter should be showing, all other colors should be removed. The below color code chart that must be followed for marking.

Quarter #	Month	Color of Tape to Apply to Cords
1	Jan - Mar	White
2	Apr - Jun	Green
3	Jul - Sept	Red
4	Oct - Dec	Orange

How to test:

GFCI Cord/Pigtail –

For the daily tests - press the test button on the Pigtail. It should trip the GFCI, not the circuit in the building. Press the reset button to re-energize.

For quarterly tests - Plug GFCI Tester into the pigtail. Make sure the correct lights on the tester light up per the diagram on the tester. Then press the test button on the tester, it should trip the circuit on the GFCI pigtail only. Press the reset button to re-energize.

Extension Cord – Plug GFCI Tester into the end of the extension cord. Plug the cord into a power source. Confirm the correct lights on the tester are lit per the diagram. **DO NOT PUSH THE TEST BUTTON, it could trip the breaker.**

Tools with Ground –

Clip one end of the Continuity tester onto the ground of the plug. Touch the other end of the tester to any metal part of the body on the tool. The tester should light if the ground is good. Next step, is to test the other two prongs on the cord across to the body. There should not be any lights on the tester.

Tools without Ground –

Clip one end of the Continuity Tester onto one of the prongs of the tool or charger. Touch the other end to any metal part of the body or charger. There should not be any lights on the tester. Now test the other prong.

GFCI Test Kit Contents:

- (1) GFCI Tester
- (1) Continuity Tester
- (1) White Tape
- (1) Green Tape
- (1) Red Tape
- (1) Orange Tape
- (1) Assured Grounding Program Booklet
- (1) Storage Box



GCFI Tester



Continuity Tester