

Important Instructions

for

Hubbell Power Systems / Chance

Equi-Mat™ Protective Grounding Grid

Catalog Numbers: C6002850 thru C6002852, C6002989 thru C6002991
and PSC6003345 thru PSC6003350 (ASTM 2715, TYPE I, STYLE I)

Keep these instructions and warnings with the product for future reference.

Occupational Safety and Health Administration (OSHA) 1910.269 states:

“Equipotential Zone. Temporary protective grounds SHALL be placed at such locations and arranged in such a manner as to prevent each employee from being exposed to hazardous differences in electrical potential.”

Like a “Cluster Ground Bar” used on a wood pole, the Equi-Mat™ Protective Grounding Grid is designed to work in parallel with properly installed temporary grounds. While standing on the grid, an area of “equipotential” is provided for personnel during installation, operation and maintenance of electrical equipment, and working near utility vehicles.

The purpose of this document is to provide the necessary instructions to install and use the Equi-Mat™ Protective Grounding Grid. **This document does not intend to inform the users of all the potential hazards related to electricity.**

If a ground fault occurs on a grounded “Y” or “star” system, a Ground Potential Rise (GPR) will exist around the fault area and at the substation that feeds the line. The capacity of the power system and ground resistance determines the voltage rise.

The ground point is attempting to bring the phase voltage to zero. The capacity (resistance and capacity to handle current) of the ground system determines how close the phase voltage is to zero. The resultant is the GPR.

There will never be a true equipotential zone. There will always be some current flow through the worker’s body. The amount of current through the worker depends on the voltage drop across his body. The desired situation is very high resistance in the worker current path and very low resistance through the rest of the ground system. The lower the resistance of the “trip” ground components, the less current that will flow through the worker. **Therefore, it is imperative that the entire grounding system be inspected to ensure low resistance in all cables, clamps, and connections.**

Always inspect and clean all connections, grid braid, cables, clamps, and associated equipment before use. Ensure all connections are clean and tight before moving into the work area.



! WARNING

Users must ensure, for their own safety, that they are properly trained for the job at hand and understand the electrical circuit of the installed grounds. Improper installation of this grid and or protective grounds could result in severe electrical shock injury or death by electrocution.



! WARNING

Properly rated insulated tools or rubber gloves must be used to make all connections to equipment or to the power system. In order for the EquiMat to adequately perform the intended function, it must be a secondary, parallel path to adequate sized, properly installed protective (trip) grounds. Failure to provide an adequate trip ground parallel path, to ensure adequate, low resistance connections, and properly install this equipment could result in severe electrical shock injury or death by electrocution.



! WARNING

Use extreme caution when moving on or off the mat. To minimize “step potential” (voltage differential from one foot to the other) a worker must hop, or use an insulated step to move on or off the grid. Use care when hopping that a slip and fall does not occur. The worker must remain on the Equi-Mat™ Protective Grounding Mat in the event of a fault occurrence. Stepping off the grid in this situation could result in electrical current thru the body resulting in severe electrical shock injury or death by electrocution.

Each Equi-Mat™ Protective Grounding Grid is supplied with a “ball stud” terminal (T6002364). This ball stud allows connections with “C” type, duck-bill or ball stud clamps. See Chance catalog. Before use, the supplied ball stud must be installed in one of the lug terminals on the grid leads. Follow the instructions included with the ball stud. A bolt, lock washer, and hex nut are supplied with one of the terminals. This is for use in connecting multiple ground grids to cover large or irregular areas. (See page 3.)



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TYPICAL USE SITUATIONS

Following are some typical situations where the Chance Equi-Mat™ Protective Grounding Grid can be used for personnel protection. Each individual situation must be evaluated for proper installation and work technique before work begins. If questions arise about any particular situation, please contact Hubbell Power Systems / Chance with all available information for recommendations.

Several of these grids may be connected together to cover large or irregular shaped areas. Refer to page 3 for typical configurations. Use the supplied bolt, lock washer, and nut to connect the lug terminal together as shown in the illustration. The terminals and hardware must be clean and tight to ensure an adequate connection.

NOTICE: Bolt torque - 400 in./lb. (33 ft./lb.) - 482 N/m.



CAUTION

This grid may become slippery when wet, frosty, or used on snow covered ground. Under these conditions, place the grid side up and secure the corners with plastic tent pegs. **DO NOT USE METAL PEGS.** Failure to follow this caution may result in injury from a fall.

- Bucket trucks, digger derricks, cranes, cement pumbers, etc.
Properly attach the vehicle to the electrical system neutral or ground, or to a driven ground. Connect the EQUIMAT™ Protective Grounding Grid to the vehicle at the same ground point as the vehicle ground cable.
- Stringing equipment, boring machines, excavating equipment, URD cable fault locators (thumper), etc.
Properly attach the equipment to the electrical system neutral or ground or to a driven ground. Connect the Equi-Mat™ Protective Grounding Grid to the vehicle at the same ground point as the equipment ground cable.
- Overhead switches, communication towers, control boxes, etc.
Connect the switch operator mechanism, or the equipment to be used at the base of the tower to the system ground point (if available) or to a driven ground. Connect the Equi-Mat™ Protective Grounding Grid to the switch operator or equipment being used. The grid will now be a parallel path with the system ground in the event the equipment or tower becomes energized.
- Pipeline welders and installers.
Connect the pipe to a driven ground rod with an adequately sized ground cable. Connect the Equi-Mat™ Protective Grounding Grid to the driven ground rod. This will help equalize the electrical potential between the pipe and ground should the pipe become energized.
- Substations (permanent and portable), portable generators.
The Equi-Mat™ Protective Grounding Grid will supplement the grid system in substations if corrosion has reduced its effectiveness.
Connect the grid to the ground connection of the substation.
The Equi-Mat™ Protective Grounding Grid can provide personnel protection around portable generators that may not be adequately grounded. If the frame of the generator is at an elevated voltage, the grid can prevent shock when touching the frame. Connect the grid to the frame or ground lug of the equipment.
- Metal enclosed switch gear, circuit breakers, etc. DE-ENERGIZED and GROUNDED.
Properly ground the equipment to the electrical system neutral or ground, or to a driven ground. Connect the Equi-Mat™ Protective Grounding Grid to the same ground point as the equipment.

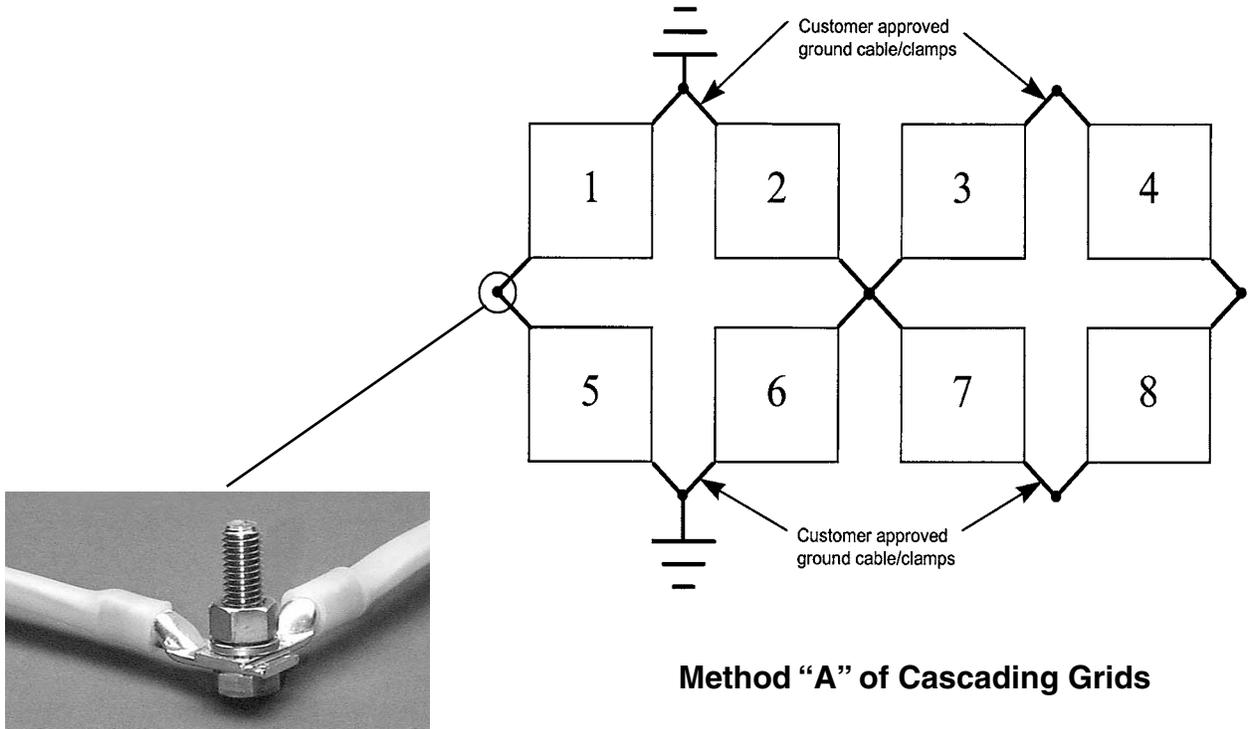


DANGER

USE OF THIS GRID FOR URD CABLE SPLICING. Attaching the grid to an energized conductor will result in the worker being in the path to ground. The grid should only be attached to a URD cable after the cable is verified to be de-energized and properly grounded at both sides of the cable splice. **DO NOT** energize the URD cable while the grid is attached. This will result in severe electrical shock injury or death by electrocution.

DO NOT USE THIS GRID FOR ENERGIZED METAL CLAD SWITCH GEAR. Working on or operating metal clad switch gear that is energized while standing on this grid presents a danger to the worker if they make contact with an energized component. Since the grid is solidly grounded, the path to ground will be directly through the worker.

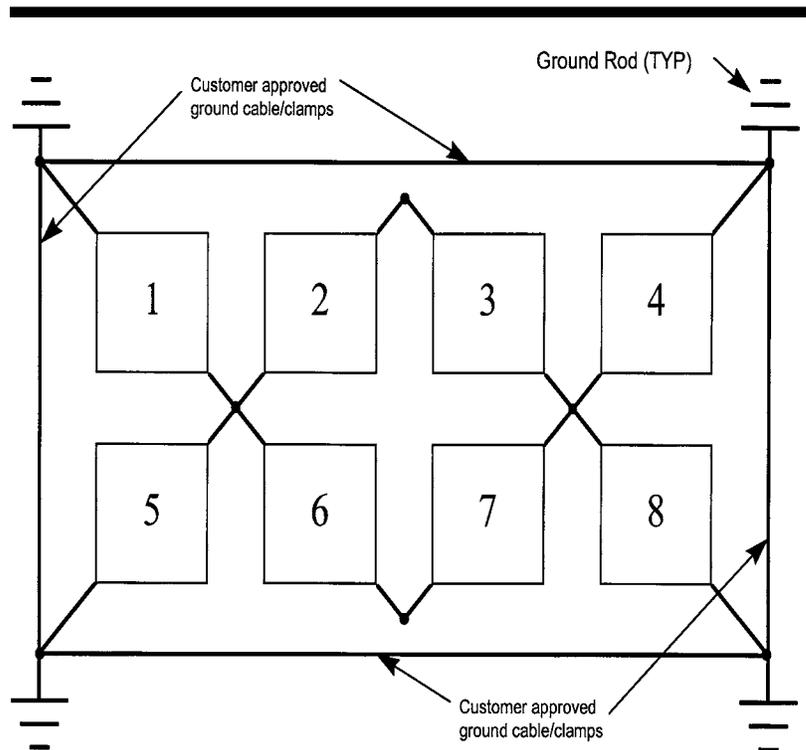
Failure to follow this warning will result in severe electrical shock injury or death by electrocution.



Method "A" of Cascading Grids

(8 grids shown)

**USE THIS METHOD WHERE A
SUBSTANTIAL GROUND IS AVAILABLE**



Method "B" of Cascading Grids

(8 grids shown)

**USE THIS METHOD WHERE A SUBSTANTIAL
GROUND IS NOT AVAILABLE**

NOTE: Because Hubbell has a policy of continuous product improvement, we reserve the right to change design and specifications without notice.



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