

GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS

1. GENERAL INFORMATION

- 1.1 This section applies to service and equipment grounding requirements.

2. DESIGN REQUIREMENTS

- 1.2 The design of the grounding system must take into consideration the usage of equipment and features of the space. The designer will evaluate the sizing of the grounding system and the need for an isolated or bonding ground system separate from the building grounding system.
- 1.3 In addition to the cold water ground and supplemental ground rods, the grounding electrode shall include building steel and to the rebar in the slab (where it is available).
- 1.4 Terminate feeder and branch circuit insulated equipment grounding conductors with grounding lug, bus, or bushing.
- 1.5 Follow applicable sections of the NEC as minimum requirements.
- 1.6 See IT section for IT Sections Grounding and Bonding requirements.

3. CONSTRUCTION REQUIREMENTS

- 1.7 Provide conduit grounding bushings, bonded together and connected to the equipment enclosure on all incoming and outgoing conduits on distribution switchgear and switchboards, distribution panels and on all conduits over 1-1/4" diameter at all panelboards, pull boxes and equipment.
- 1.8 Provide bolted ground connector on all enclosures for disconnect switches, starters, pull boxes, wiring, troughs, transfer switches and similar equipment, and connect to conduit grounding bushings.
- 1.9 Provide separate, insulated green ground conductor with each feeder and branch circuit. Connect the conductor from the panel ground bus or connector at the source to all items to which the conduits or raceways connect. Bond to a ground lug within each panel, box or equipment.
- 1.10 Bond all metal piping systems to the service equipment ground bus.
- 1.11 Provide bonding jumpers across all expansion/deflection fittings.

- 1.12 Grounding of Panelboards with Ground Bus: Connect the ground conductor in the panel feeder to terminals on the ground bus.
- 1.13 Grounding at Pull Boxes: Bolt ground connector in all pull boxes and connect to grounding bushings on all incoming and outgoing conduits with a copper conductor for boxes containing power feeders.
- 1.14 Bond raised floor systems to building steel with No. 6 AWG bare copper conductor at each corner. For floors with non-bolted stringers, additional floor bonding connections shall be made to interior pedestals.
- 1.15 Continuity Tests: All ground cables shall be tested for continuity.
- 1.16 Field tests shall include:
 - a. Grounding electrode system resistance tests.
 - b. Ground rod tests, prior to connecting

END OF SECTION