

The connection between the grounded circuit conductor and the equipment grounding conductor at a separately derived system.

**Ground-Fault Current Path.** An intentionally constructed, low-impedance electrically conductive path designed and intended to carry current under ground-fault conditions from the electrical supply source and that facilitates the operation of the overcurrent protective device or ground fault detectors on high-impedance grounded systems.

**Grounding and Bonding.** An electrical, electrically conducting connection between an ungrounded conductor of an electrical circuit and the normally non-current-carrying conductors, metallic

or other electrically conductive path from the point of a ground fault on a wiring system through normally non-current-carrying conductors, equipment, or the earth.

Ground-fault current paths could consist of any combination of equipment grounding conductors, metallic raceways, metallic cable sheaths, electrical equipment enclosures, such as metal water and gas piping steel, framing members, stucco mesh, metal ducting, reinforcing steel, shields of communication cables, and the earth itself.

**References.** For other articles applying to particular cases of installation of conductors and equipment grounding and bonding requirements are identified in other articles of this article.

**General Requirements for Grounding and Bonding.** The following general requirements identify what grounding and bonding of electrical systems are required to accomplish the requirements of this section.

**System Grounding.** Electrical systems that are grounded shall be connected to earth in a manner that will limit the voltage imposed by lightning, line surges, or other transient voltages that will stabilize the voltage to earth during normal operation.

An important consideration for limiting the imposed voltage is the routing of bonding and grounding conductors so that they are not any longer than necessary to connect the conductors to ground without disturbing the permanent parts of the installation and so that necessary bends and loops are avoided.

**Electrical Equipment.** Normally non-current-carrying conductive materials enclosing electrical conductors or equipment, or forming part of such equipment, shall be grounded to ground on these materials.

**Electrical Equipment.** Normally non-current-carrying conductive materials enclosing electrical conductors or equipment, or forming part of such equipment, shall be grounded to the electrical supply source in a manner that establishes an effective ground-fault current path.

**Electrically Conductive Materials and Other Equipment.** Normally non-current-carrying electrically conductive materials that are likely to become energized shall be grounded to the electrical supply source in a manner that established an effective ground-fault current path.

**Ground-Fault Current Path.** Electrical equipment and wiring and other electrically conductive material likely to become energized shall be installed in a manner that facilitates the operation of the overcurrent device or ground detector for high-impedance grounded systems. It shall be capable of safely carrying the maximum ground-fault current likely to be generated from any point on the wiring system where a ground fault may occur on the electrical supply source. The earth shall not be considered as an effective ground-fault current path.

**Electrical Equipment.** Non-current-carrying conductive materials enclosing electrical conductors or equipment, or forming part of such equipment, shall be grounded to ground to limit the voltage imposed by lightning or unintentional contact with higher-voltage lines and limit the voltage to ground on these materials.

**Electrical Equipment.** Non-current-carrying conductive materials enclosing electrical conductors or equipment, or forming part of such equipment, shall be grounded to ground to limit the voltage imposed by lightning or unintentional contact with higher-voltage lines and limit the voltage to ground on these materials. Grounded equipment in a manner that creates a low-impedance path for ground-fault current that is capable of carrying the maximum fault current likely to be generated from any point on the wiring system where a ground fault may occur on the electrical supply source. The earth shall not be considered as an effective ground-fault current path.