

Distinguish, differentiate, compare and explain what is the difference between Earth and Neutral. Comparison and Differences between Ground and Neutral.

A Neutral represents a reference point within an electrical distribution system. Conductors connected to this reference point (Neutral) should, normally, be non current carrying conductors, sized to handle momentary faults (short circuits) occurring in electrical equipment. However, with the introduction of non linear loads, such as computers, electronic lighting, TVs, VCRs and other switchmode power conversion equipment, the requirements for the neutral conductor has changed (increased).

A Ground represents an electrical path, normally designed to carry fault current when a insulation breakdown occurs within electrical equipment. (Note: Breakdowns can be forced by connecting (dropping) a metal tool or conductive material from a voltage potential to the steel structure within a facility.) Connections to the electrical path (Ground) are made convenient for the installation of electrical equipment. Some current will always flow through the ground path. This current will come from a number of normal sources. Capacitive coupling and Inductive coupling between power conductors and the ground path (conductive conduit, conductive structure members, etc) are the greatest sources of ground path current.

Difference between Earth and Neutral

S.No.	Earth or Ground	Neutral
1	Earth or Ground in a mains (AC power) electrical wiring system is a conductor that provides low impedance path to the earth to prevent hazardous voltages from appearing on equipment & brings back the fault current.	Neutral is a circuit conductor that normally carries current back to the source, and is connected to Earth (Ground) at the main electrical panel.
2	Ground is not neutral.	Neutral can be grounded.
3	Color of earth wire is green or green-yellow mixture.	Color of neutral wire is black.