



# **SNS COLLEGE OF TECHNOLOGY**

**(An Autonomous Institution)**



## **Distinction between system grounding and Equipment Grounding**



## **Grounding is used to provide a safe path for a fault current to flow.**

Grounding is an integral part of any properly operating electrical system. In residence, grounding protects the occupants by providing a safe pathway for unwanted electricity that might otherwise create a hazard. Electricity always takes the easiest flow path to earth. A ground is a low-resistance conducting connection between electrical circuits, equipment, and the earth.

Grounding is used to provide a safe path for a fault current to flow. A complete ground path must be maintained when installing switches, light fixtures, appliances, and receptacles. In a properly grounded system, the unwanted current flow blows fuses or trips circuit breakers. Once a fuse is blown or a circuit breaker is tripped, the circuit is open, and no additional current will flow.



Grounding is usually done at two levels:

1. System grounding and

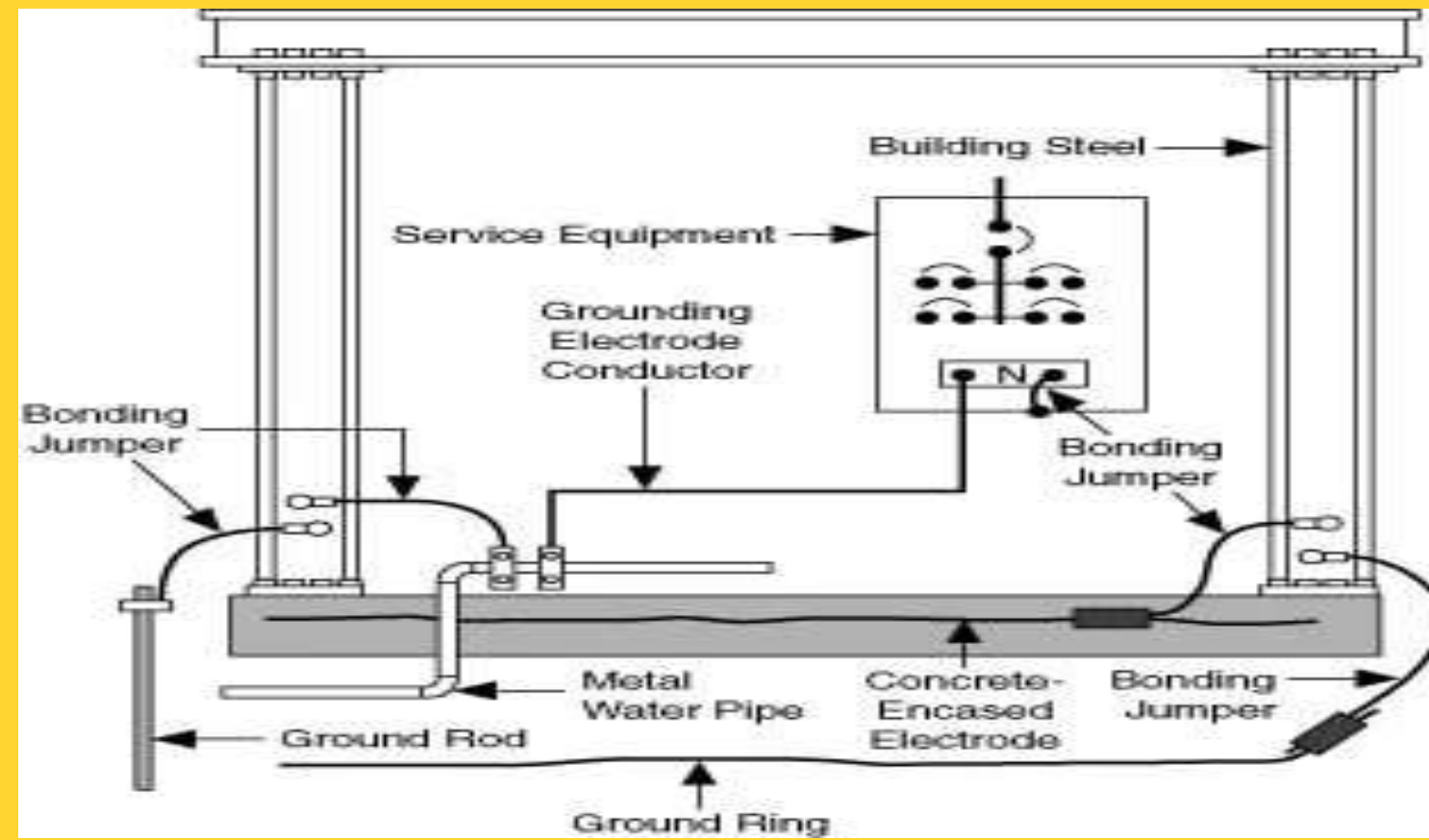
2. Equipment grounding.

- **The system ground** is a special circuit designed to protect the entire distribution system of a residence.
- **Equipment ground** is essentially a circuit designed to protect individual components of an electrical system.
- Grounded conductors are used to providing a path to the ground for system and equipment grounds.
- A grounded conductor is one that has been grounded on purpose.
- Grounded conductors are typically identified with green or green and yellow markings and may be installed as bare conductors.



# System Grounding

The primary function of system grounding is to protect the service entrance wiring and the circuits connected to it. There are several methods of grounding an entire system. The two most popular methods used for grounding an electrical system are electrode grounding and water pipe grounding (see *Figure 1*). Other grounding methods use a concrete-encased electrode or a ground ring, both of which are less common in residential wiring systems.

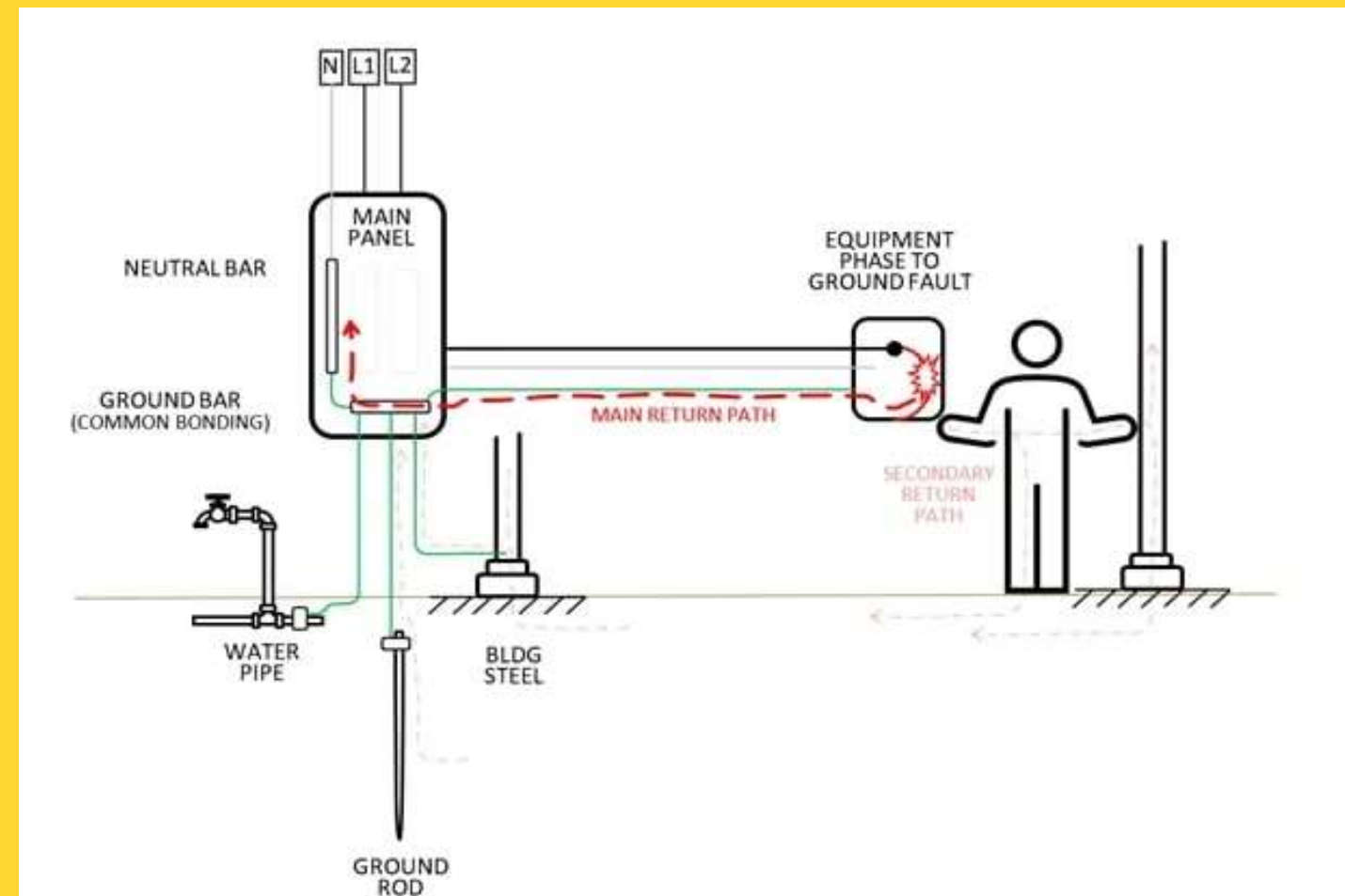




# Equipment Grounding



**Equipment grounding's** main purpose is to **protect individual electrical devices**. Equipment grounding safely grounds any devices or appliances attached to an electrical system or plugged into receptacles inside a home. For example, when a refrigerator has not been properly grounded, the electrical current caused by a short will seek the easiest path to earth. Unfortunately, the human body is an electrical conductor and allows current to reach the earth by traveling through the body (electric shock). Proper equipment grounding protects the body by harmlessly conducting unwanted electricity to the ground (see *Figure 2*).





# THANK YOU