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The Importance of Proper Grounding

The Importance of a Properly Grounded Electrical System

Without a grounded electrical system, surge protectors will not work as well. Plug-in type surge protectors will not work as well if the electrical outlet is not properly grounded. Surge protectors at the service entrance will not work as well if the electrical system ground is not properly installed.

Proper grounding is important because that is the path the surge protector can efficiently use to divert most types of power surges.

Before purchasing or installing service entrance or plug-in type surge protectors, have your electrical system checked to make sure the electrical circuits and the electrical service are properly grounded.

The electrical system will be grounded to either a water pipe or to an outside ground rod driven into the earth. For those electrical systems grounded to a water pipe, sometimes this connection becomes poor due to corrosion or from a loose connection. For electrical systems connected to outside ground rods, the copper-clad ground rods are only UL rated for 20 years. Older ground rods may not provide adequate grounding due to corrosion or other changes that take place over time.

Grounding Problems in Older Homes

Older houses built under no electrical code or older electrical codes that didn't require a ground wire may have outlets with only two prong holes. This is usually an indication of no ground wires on the electrical circuits. Installing missing ground wires on the circuits requires a qualified electrician pulling new wires and installing new outlets.

Just because your home's wall outlets have three prongs doesn't necessarily mean they are grounded. Sometimes two-prong outlets are replaced with three-prong type even though there is no ground wire. Plus, there is always a chance of a loose connection or poor installation of a ground wire that causes the loss of proper ground at the outlet.

Inadequate grounding at electrical outlets can occur even if there is a ground wire. Wires can become loose over time at the connection to the outlet.

Especially in older homes, to ensure the surge protection devices are going to work properly, have a qualified electrician check the electrical system for adequate grounding.

How to Determine if Your Home Has Proper Grounding

You can check to see if your home's electrical outlets are grounded. Many hardware stores sell circuit testers for around \$5. They plug into an outlet, and by observing indicator lights on the tester, you can determine if the outlet is properly grounded. This is a good start to determining if the outlets are grounded. Each outlet must be tested.

For a higher level of assurance, an electrician can come in and thoroughly test the electrical system with more reliable equipment.

Locating Electrical, Cable TV, and Telephone Service Entrances Together

Power surges can enter the house through the electrical, cable TV (or satellite dish cable), or telephone services. When designing and building a new home, ask the contractor to locate the cable TV service and telephone service entrance into the house near the electrical service entrance. This will help in two ways:

1. It is very important that each of these systems be grounded to the same physical ground point as the electrical service. In all cases, the cable TV and telephone grounds must be physically connected to the ground of the electrical system. A ground wire must be run from the telephone and the exterior cable TV boxes to the electric service ground point.

Having these services enter the house close together shortens the ground wires, thus

increasing the systems' protection. According to the National Electric Code, the telephone service, cable TV, satellite, and antenna grounds must be connected to the ground point of the incoming electrical service to provide proper protection. Many times this is not done.

2. Having the telephone and cable TV services near the electric service makes the connection of all three lines through a service entrance surge protector possible.

If you wish to protect your new computer from power surges, just buying a surge protector and plugging it into an outlet may not provide the protection you desire. The grounding of the electrical system must be checked.

State Farm® believes the information contained in the Disaster Survival House is reliable and accurate. We cannot, however, guarantee the performance of all items demonstrated or described in all situations. Always consult an experienced contractor or other expert to determine the best application of these ideas or products in your home.

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