



STATIC ELECTRICITY, RISKS OF STATIC ZAP, AND PREVENTION, OR

HOW TO **STOP THE STATIC ZAP!**

Static electricity?

Have you ever walked across the room, touched a metal object, and WHAM – got zapped? Of-course you did! Everyone does!

This is a result of static electricity. We have all seen the larger effects of static electricity – they are called lightning!

Static electricity is an electrical charge that is not moving. In dry climates, people tend to generate and collect static charges, sometimes as much as 55,000V! This occurs as a result of friction.

When we move, even simple things as breathing, the movement generate static charges. The charge quantity generated, depends on the type of materials that are moved against each other. Synthetic material tends to create static electrical charge the fastest, but even conductive material (like the human body) collect static electricity. The collection of static electricity – a surplus or lack of free electrons, is universal. Just walking across a carpeted room, can generate several thousands, or even tens of thousands, of volts of electrostatic charge.

Why do we get ‘zapped’?

Nature likes balance. If one body has too many free electrons and the other one does not, the difference is called ‘potential difference’ which is measured in volts. Since we collect electrostatic charge, in the form of electron surplus, those electrons will try to move to less charged objects. This is the ‘static’ potential difference.

In humid environments, the charge of excess electrons vanish, literally, into thin air. They ‘hitch a ride’ on the water molecules that are in the air, and just go away, taking the static charge with them. However when the climate is dry, the electrons simply collect on our body. Those electrons **MUST** go somewhere – to a larger body such as a metal cabinet, or to ground.

Air, especially dry air, is an excellent insulator. It takes approximately 3,000V to arc across 1 mm of dry air. Thus for example, when a person that collected on his/her body 18,000V of static charge, gets close to a grounded or large conductive object, an arc will occur when the distance between the two is within 6 mm – about ¼”. The air between the person and the object becomes ionized, and –ZAP- an arc results. When arcing occurs, the static discharge is very fast. It is not the energy, but the speed of the discharge, that causes the pain when you get zapped.

In reality, the person that got hit by a static zap just got struck by a lightning – albeit a very tiny, small lightening, but a lightning non-the-less, and all because of static electricity.



If the item that gets zapped is an electronic device – say you walked across the room in order to change a DVD, and zapped your new DVD player, the damage may be more than just the pain you feel. You will ‘ouch’ once from the zap, and then when you have to spend several hundreds of dollars to replace the DVD, computer, telephone, printer, or whatever other device you inadvertently destroyed.

Risks of static electricity

Is static electricity dangerous? Well that depends. To a healthy person, generally not, and in most cases not even to the infirm. Rumors abound about the person that got a static zap and died because the shock killed his pacemaker. We found no substantive evidence of such occurrence, and do not believe it. However, it is very likely that someone of ill-health can fall down or even have other ill effects due to the surprise of a nasty static shock. Similarly, even a young, healthy person, may harm him/herself, for example by spilling a hot drink, if a static zap ‘jumps’ them unexpectedly.

The risks to electronic equipment are clear to most, and are more common than people believe.

High risk and low risk population

Anyone who comes in contact with a lot of synthetic materials, is a good candidate for a static zap. People who wear synthetic clothing, people in a house that has synthetic carpets, or synthetic covered furniture, people that use synthetic blankets – all are great candidates for getting zapped. Pet contact generates great amounts of charge, and those of us who have pets represent yet another group at high risk. Most people are susceptible, but woman and children tend to use more synthetic clothing, and thus suffer more from this phenomenon. Babies get zapped often by their parents. Often, this is why babies start crying when picked up by an adult.

There are very few lucky people that seem to never get zapped. Sometimes it is a matter of the environment they live in. But mostly those people have an almost constant layer of sweat about their body. The sweat evaporates and takes with it the electrical charge. Those are the lucky ones. Some simply have very thick skin and they do not notice being zapped. Those people can still zap electronic equipment.

The solution

Until now, most one could do was bear the pain, and hope your computer, television, telephone, etc. will survive the electrostatic discharge.

But now, all you have to do is install StaticOff Zapper Stopper in any room. When you move about the room, such as when you pass by the door, after prolonged seating, as you get up, etc., simply touch any of the StaticOff Touch Points located in each corner of the Zapper Stopper. The charge you carry will dissipate without pain to the household ground. Now you can move about, touch grounded objects, and never get zapped. However, you should discharge yourself often, because the static charge will rebuild on your body.



How does it work?

Each of the StaticOff Zapper Stopper four contact points is connected to electronic circuitry that hook together to a neon lamp visible through the little discharge indicator window. When you touch any touch point, the static charge you carry is transferred through the electronic circuitry to the neon bulb (which lights up) to ground. The trick however is that the discharge is SLOW. Sure, it takes less than half a second to discharge, but eh zap takes microseconds! Because the discharge is slow, there is no pain.

Now, you can keep moving around your home or office, and enjoy a certain period of ‘zap protection’.

Use Recommendations

The best way is to adopt the habit of ‘flicking your finger’ at the touch points whenever you go by a StaticOff zapper Stopper. Just touch for a very short time, and the static goes away!