

What is triboelectric charging?



Have you recently purchased State-of-the-art technology? Is it unprotected from static electricity? It can be compromised.

Tragically, highly advanced, sensitive circuitry could be unwittingly destroyed with the touch of a statically charged, finger.

Walking briskly across a floor could generate about 3,000 volts of electricity and many components may be destroyed; even with a much smaller 300-volt discharge. The voltage a moving person generates across a floor is not insignificant. It's called triboelectric charging. The charge increases with movement; if an individual is not insulated against the charge.

Why worry? This electro-static discharge carried by someone can cause irrevocable damage for workplaces that depend on delicate computer equipment such as data warehouses, R&D sites, clean rooms and laboratories. It could also lead to serious yearly losses in damaged goods and broken equipment, particularly for the electronics manufacturing industry. Other industries are at risk: munitions manufacturing, hyperbaric chambers, oil and gas facilities and military installations. Electro-static discharge could lead to more serious implications where a discharge could even act as a source of ignition.

Fortunately, there are method of prevention. One is installing of anti-static floors, which removes any build-up of charge; generated by a persons routed to an appropriate earthing point. Anti-static floors contain specialist conductive materials. These materials remove any charge built up in a person when their foot comes into direct contact with the floor's coating.

The way it works: The charge is removed through the floor and away from sensitive working equipment or environment. Next, the charge hits a carbon-filled conductive primer and moves into copper tape located beneath the floor's coating. This grounded, copper tape is attached to a safe earthing point. A vital aspect of anti-static flooring is the earthing point, which dissipates the electro-static discharge. Earthing points can vary significantly; from a highly conductive metal rod, embedded in the slab of a building. Another earthing point would be the building's steel beams or a regular plug socket. For large areas, there is a general rule of thumb: that is have one earthing point for every 200 square meters of flooring.

The categories of anti-static flooring are based on the speed in which electricity travels through the surface coverings, typically measured in ohms. Conductive surfaces have the least resistance; dissipative surfaces allow electricity to move through them at a controlled rate of speed. Experts agree that insulative surfaces are usually the

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most resistant floors. Whether a floor should be categorized as conductive, dissipative or insulative could be determined through testing. There are many factors to consider when determining the ways to ensure a floor's finish meets a site's anti-static needs.



For a better understanding of how these factors interact with each other, get in touch with [Flowcrete](#)'s expert team today.



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