

1. ESD Requirements:

All individuals handling static-sensitive devices, including certain LEDs, in any manner should be trained to understand ESD and be able to prevent it. Specifically any person handling static-sensitive devices should wear a conductive wrist strap connected to a known good electrical ground. The wrist strap and ground connection should be checked every time the person re-enters the workstation or reconnects the wrist strap to ground.

2. Static Safe Workstation Requirements

ESD sensitive devices can be damaged by humans, machines, or a charged body. For example, plastic boxes and bags carry charges which can damage static-sensitive devices. Therefore, a static-safe workstation should be provided whenever the static-sensitive devices are in an unprotected or vulnerable state (not in a closed Faraday cage). The workstation should never be used as a storage area for any materials including the static-sensitive devices. Workstations should also be free of static charge generators such as untreated page protectors, personal items, notebooks, etc. Good manufacturing practice dictates that such items be kept at least 1 meter from ESD sensitive items.

3. Work Surfaces

The ideal work surface is made from static dissipative materials, constructed so that any charged device it contacts will be discharged slowly through the resistance of the surface. A conductive surface isolated by a resistor is not recommended; conductive surfaces can absorb a discharge thus damaging the static-sensitive devices or causing short circuits in assemblies.

4. Grounding

An accessible grounded terminal or “banana plug” receptacle should be provided for connecting the workstation operator’s wrist strap to ground. The resistance from the facility ESD ground to this terminal should not exceed two ohms. Wrist strap cords should be directly connected from the facility ESD ground to the wrist strap. No other devices should be inserted into the ground cord’s path to ground, such as clothing or work surfaces. Wrist strap cords normally contain a built in, 1 megohm resistor for the operator’s protection.

5. Signs

Good practice dictates that a sign, readable from at least one meter away, shall be placed at each static-safe workstation.

6. Antistatic Treatments and Ionization

Many static generators can be made temporarily safe by the use of topical chemicals designed for this purpose, or by the use of air ionizers. Ionizers are strongly recommended for use whenever static-sensitive devices are passed through machinery.

7. Clothing

Where possible, natural fiber clothing should be worn when working with static-sensitive devices, avoiding synthetics such as nylon and rayon.

8. Record Keeping

While up to the individual company or department, it is recommended that records be kept of manufacturing lots or work orders that involve static sensitive devices, and of periodic testing and verification of anti-static equipment.

- adapted, with thanks, from Agilent Technologies *Application Note 1142*