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grounded solutions



Helping Architects Stay Grounded

flooring that keeps you grounded

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Whether you're preparing for a new project or a renovation, you need to stay grounded about static-control flooring.

If your flooring specs don't meet the accepted standards, you risk damage to equipment, facility shutdowns, and liability. So don't be complacent about compliance. Match the right product to the right environment by applying evidence-based design.

In this presentation, we have prepared the following:

- A preliminary checklist about ESD flooring (see next page)
- A chart summarizing the two different environments requiring static protection: controlled electronics manufacturing and uncontrolled real-world spaces.
- A chart on flooring products and recommended uses.
- A chart on charge generation.
- Contact information.

Checklist

✓ **Check your environment.**

Are you working in an ESD-protected area (EPA)—where special footwear and wrist straps are mandatory but difficult to enforce? Or in an end-user environment—where there are no static-control protocols? In either case, it is best to strive for fault-tolerant, maximum static protection.

✓ **Check the footwear requirements.**

Account for all types of footwear when evaluating the static-generation properties of the floor.

✓ **Check on the most appropriate application.**

Eclipse EC Rubber, ESD Vinyl, ESD Carpet, and ESD Epoxy are all appropriate for different environments. Consider using a combination, as needed.

✓ **Check conductivity levels.**

- Find the “sweet spot” for conductivity.
- Electrical resistance should be verified with an OhMmeter. If the material does not pass the OhMmeter test, it cannot be grounded. Avoid materials measuring less than 1.0×10^5 OhMs to ground in mission-critical operations.

✓ **Check terminology.**

Pay special attention to terms like static conductive, static dissipative, OhMs, volts, resistive properties, ground, Resistance to Groundable Point (RTG), Resistance–Point to Point (RTT), and static generation.

Checklist (cont.)

- ✓ **Check specification of upper limit for body voltage generation.**
 - ANSI/ESD S97.2: ideal upper limits
 - Mission-Critical: should not exceed 1000 volts (1kV)
 - EPA: cannot exceed 100 volts
 - Class-0 ESD: should not exceed 25 volts

- ✓ **Check reference grounding standards and test methods.**
 - Write your specification based on performance parameters.
 - Reference ANSI/ESD S20.20 for electronics manufacturing.
 - Reference Motorola R56 and ATIS-0600321.2010 for mission-critical environments like 911 dispatch areas, control rooms, and data centers.

- ✓ **Check on sprays and waxes.**

Static-control floors should never require anti-static sprays or waxes to enhance or maintain performance.

- ✓ **Check the floor after it is installed.**

Request a free flooring audit.

For more details on the above, visit www.staticworx.com/articles/esd_flooring-terms.php.

Spaces Requiring Static Protection

Controlled Environments/ Manufacturing

- Examples: ESD-protected areas (EPA) including microelectronics fabrication, circuit board assembly, manufacturing test and repair of electronics, clean rooms
- Complies with ANSI/ESD S20.20 100 volt static-charge maximum
- Handles open electronic parts
- Floor and special footwear provide ground connection
- Foot grounders or ESD shoes required
- Wrist straps required

Uncontrolled Environments/ End-User

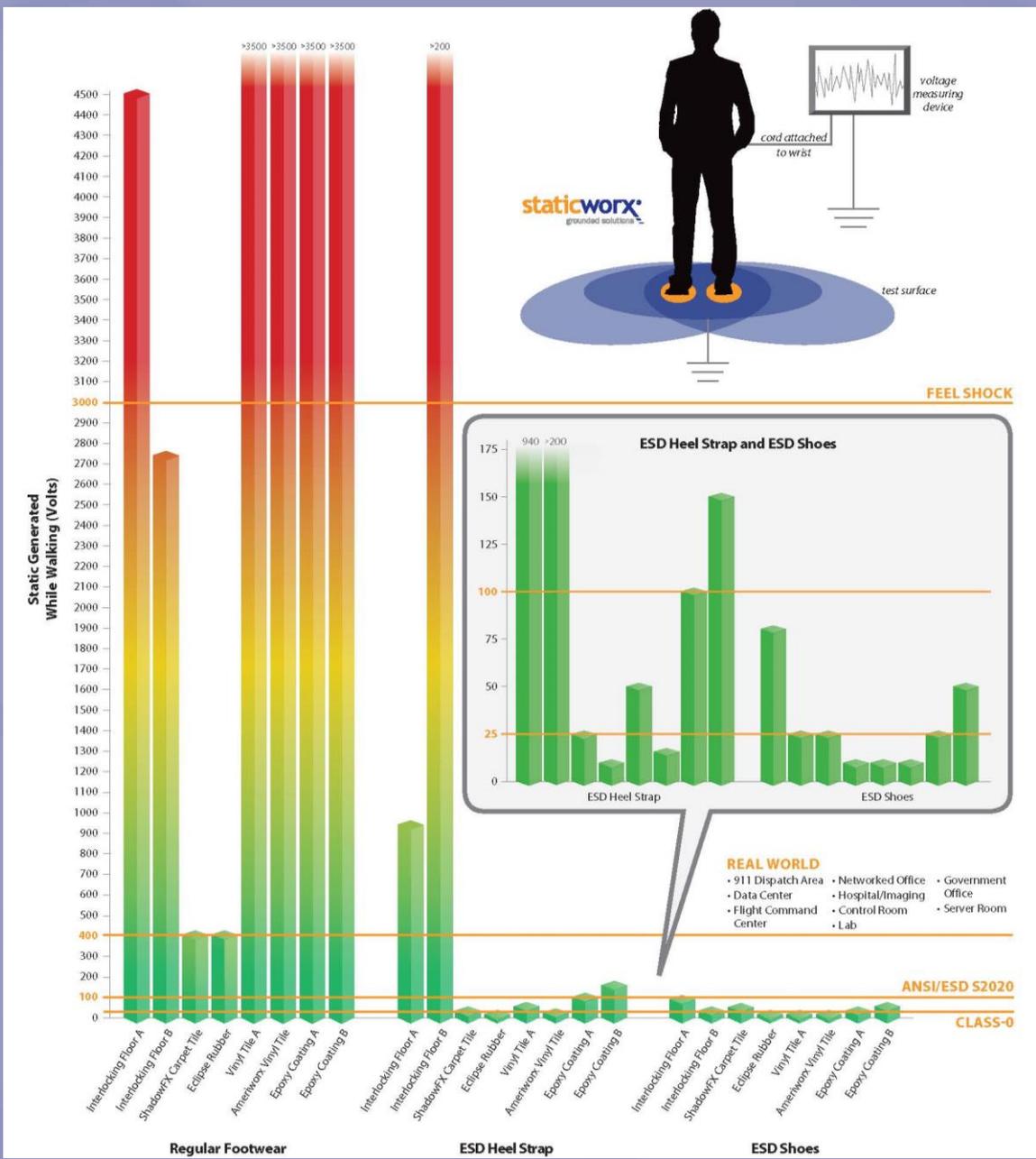
- Examples: mission-critical areas such as server rooms, 9-1-1 dispatch areas, development labs, university labs, data centers, certain clean rooms, flight command centers, hospitals, government
- Requires uninterrupted operation of electronic systems
- No wrist straps or special footwear
- Floor must prevent charges on people wearing all types of footwear

| Static-Control Flooring Options | Environment Complies with ANSI/ESD S20.20 using ESD Footwear 100 volt maximum | Environment Mission-Critical No ESD Footwear 400 volt maximum |
|--|--|---|
| Eclipse EC and GF Rubber | Yes | Yes |
| Conductive Vinyl Tile | Yes | No |
| Static-Dissipative Vinyl Tile | Yes | No |
| Plastic Interlocking Conductive Flooring | Yes¹ | No |
| Plastic Interlocking Dissipative Flooring | Yes | No |
| Conductive Epoxy Coatings | Yes¹ | No |
| Static-Dissipative Epoxy Coatings | Yes¹ | No |
| Shadow FX Static-Dissipative Carpet Tile | Yes | Yes |
| Antistatic High-Pressure Laminate (HPL) | No | No |
| Conductive High-Pressure Laminate (HPL) | Yes | No |

Note¹ Always request independent lab test reports. Some epoxy coatings and Interlocking ESD vinyl floors do not meet the maximum 100 volt charge generation requirements of ANSI/ESD S20.20 when tested with ESD footwear.

All static-control flooring options should be tested and evaluated based on the type of footwear that will be used in the specific space. Epoxy and vinyl offer no static protection without the use of static control footwear.

Shocking Information: Charge Generation Comparison





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