# ULTRASTATIC MISSION CRITICAL

## ESD Chair Mat for Covering Hard Surface Flooring and THIN pile (direct glue down) Carpeting

## The portable ESD Floor for your workstation!

- **For use over hard surface flooring and THIN pile (direct glue down) Carpet**
- **Titanium Tough but thin for reduced tripping hazards!**
- **Permanent or temporary ESD safe workstation mat!**
- **Fully compliant to the NEW ANSI and NFPA 484 standards!**
- **Passes ISO and all ESD Audits with ease!**
- **TR53 friendly! ULTIMATE Mission Critical Static Control!**

Shown with optional border of ESD warning tape

Chair casters grind dirt, wire clippings even nuts and bolts deep into unprotected hard surface floors (including concrete and epoxy) Results - Unsightly scratches, gouges and electrically insulative DIRT. The problem is compounded in static sensitive manufacturing by the need for advanced control of electrostatic discharge.

Not only must the mat protect the flooring, it must provide unparalleled electrical conductivity in order to dissipate the electrostatic potential generated by the contact and separation of the chair casters rolling on the matting (or the technician walking on the mat).

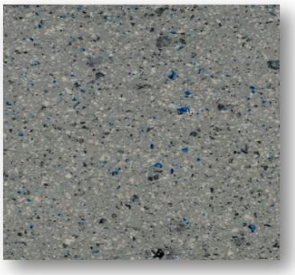
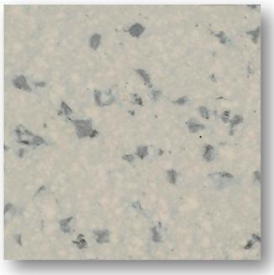
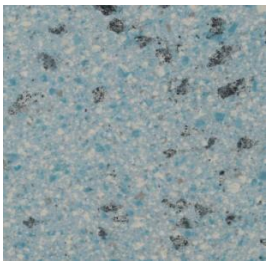
Prior to the new standards antistatic floor mats merely had to provide an electrical resistance to ground slightly below 1.0E09. But with today's **new** requirements the ESD flooring (or matting) should fall in the **conductive** range of <1.0E06 to provide top notch dissipation of Electrostatic potential and interface with drag chains and heel straps. Why the changes? Many sophisticated components and materials are simply too susceptible to damage from even miniscule levels of the energy dissipated in a static discharge.

ALL clear Anti-static Chair Mats FAIL ANSI, ESD, DOD and NFPA Standards!


Many ordinary anti-static mats rely on the ambient humidity in the environment to render the mats even ***slightly*** conductive. When the humidity is high (>60% rH) they sometimes meet the old specifications for electrical conductivity BUT when the humidity drops they become insulative! A mat's electrical conductivity to ground tells the tale. Do some of the most popular antistatic mats *really* work? Not really. A piece of dry wood comes in about as conductive AND they aren't even close to being conductive enough to comply with the latest standards.

Our Mission Critical Static Control Chair mats are custom manufactured using our Titanium static conductive ESD flooring sheet vinyl. This material features an unbelievably hard, wear resistant top surface laminated to a full surface highly conductive backing and provides ULTIMATE and permanent static conductivity in all environments and at all humidity levels. An industry approved ground cord is supplied with each mat. Full Certification to ANSI ESD S20.20 standards using NIST in compliance test instruments is available for a minor upcharge of $35.00 per mat. United's Mission Critical ESD Floor Mats Tame the Static Beast.

## Available Colors

| | |
|---|---|
|  Dark Gray – Part Number Ti482 |  Clean White – Part Number Ti480 |
|  Electronic Blue – Part Number Ti483 |  Pale Gray – Part Number Ti481 |

## MATTING MATERIAL

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|---|---|
| Average Surface Resistivity Point to Point (PTP per ESD S 7.1) | >1.0E04 <1.0E06 |
| Average Electrical Resistance to Ground (RTG per ESD S 7.1) | >1.0E04 <1.0E06 |
| Electrical Resistance of technician in heel grounders in conjunction with material to ground (per ESD 97.1) | < 3.5E07 |
| Tribo charging characteristics (per ESD 97.2) | < 10 Volts |
| Flooring Radiant Panel: NFPA 253: Critical Radiant Flux | 0.73 W/cm$^2$, Class 1 |
| Flooring Radiant Panel: NBSIR 75-950: Critical Radiant Flux | Pass, Class 1 |
| Flooring Radiant Panel: ASTM-648: Critical Radiant Flux | 0.73 W/cm$^2$, Class 1 |
| Smoke Density, ASTM E-662; NFPA 258; Average optical density in burning / smoldering mode | <450 |
| Residual Indentation LF-475A | 0.002 average |
| Abrasive Wear, Taber H-18 wheel, 5,000 cycles, 1,000 gm weight | 1.1% loss of weight |
| Abrasive Wear, Taber H-18 wheel, 1,000 gm weight to wear layer penetration (end point) | >20,000 cycles, <2.0% loss of weight |
| Static coefficient of friction, ASTM D-2047-03, James Test average wet, dry leather | .60 approx. |
| Static load limit DIN 16961.2 | >1,000 PSI |
| Charge decay time per FTMS 4046-101c | < .17 seconds |
| Thickness | 2 mm (about a 1/16”). |
| Spark Test: 300 mm metal file, 1.8 meter arc, darkened room | PASS |

**Ground Cord Specifications:** Each ground cord contains a 1 Megohm Safety Resistor. See specification sheet as follows for details.

## Testing and Certification:

Each 40220 HSB or HSC Mat is thoroughly tested to ANSI ESD S20.20-2014 standards. An optional Certificate of Compliance ($35.00 per mat upcharge) provides the following data:

Test Method 1, conductivity: ANSI/ESD S 20.20-2014 (page four, table two) TR-53 Footwear / Flooring Section Compliance Verification utilizing methods partially incorporated into ANSI/ESD STM7.1-2013 and STM 97.1. NOTE: Passing is <1.0E09. Results shown for method 1: Matting and Ground Cord Electrical Resistance to Ground (average of 5 readings), Point to Point Electrical Resistance (average of 5 readings) and the Electrical Resistance of a Technician in heel straps with the matting and ground cord per STM 97.1 (average of 5 readings).

Test Method 2, charge generation: ANSI/ESD S 20.20-2014 (page four, table two) TR-53 Footwear / Flooring Section Product Qualification per STM 97.2. NOTE: Passing is <100 volts.

## Warranty

WARRANTY: These mats are warranted for LIFETIME Static Control Performance, LIFETIME topical wear performance and LIFETIME compliance to ANSI ESD S20.20-2014 and NFPA 484-15* ESD Standards. The Ground Cords are warranted for One Year. These mats support chair caster traffic nicely but they are NOT designed for continual substrate to mat chair caster traffic. This type of traffic may cause chipping to the edges of these mats. Edge chipping is NOT covered under the warranty. BE SURE to order your mat in a wide enough width and long enough length to avoid this issue. **Remember: The chair should always stay on the mat.** Use ONLY ElectraClean and water or ElectraMat ESD Mat Cleaner to clean these mats. Other cleaning chemicals may leave an insulative residue and make the mats brittle. Note: These mats are built to order and custom cut to size. As such, they are not eligible for refunds or returns.

*May require a resistor free ground cord for NFPA and DOD standards.

Initial release of this document: 09/0716.
Revision date: 1/31/19 (added option for NIST certification).
Revision date: 11/30/19 (SSL applied)

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