



## Titanium Series Mission Critical ESD Floor Mats

ESD Chair Mats 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 ESD standards!
- Passes ISO and all ESD Audits with ease!
- TR53 friendly! ULTIMATE Mission Critical Static Control!



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). With today's new ESD requirements (ANSI/ESD S20.20-2021, table 2, page 6) ESD flooring in conjunction with the technician must hit two distinct criteria:

**PRODUCT QUALIFICATION:** Prequalification is normally done at the mat manufacturing level. The flooring / footwear system is tested for electrical resistance per ANSI/ESD STM97.1 and must post a resistance level (measured in ohms) of less than  $1.0E09$ . The system is further tested to ANSI / ESD STM97.2 for electrostatic voltage generation with a technician following a choreographed step motion. The voltage generation must be less than 100 volts and BOTH requirements must be met.

### TITANIUM SERIES CHAIR MATS MEET THESE REQUIREMENTS

**COMPLIANCE VERIFICATION:** Per ESD TR53 footwear section the mat MUST provide a combination resistance level of less than  $1.0E09$  ohms. And, it's not just the footwear! Carts, ESD chairs and any other portable items *must* provide this combination resistance level as well. 40220 HSB's are provided in a specific range of electrical conductivity that easily allows this compliance.

### TITANIUM SERIES CHAIR MATS MEET THESE REQUIREMENTS

**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 and provide optimum static control properties.

Our Mission Critical Static Control Chair mats are custom manufactured at our Colorado facility using our [Titanium](#) series static control 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 S20.20-2021 standards using NIST in compliance test instruments is available for a minor upcharge of \$35.00 per mat.

**Available Colors:**

|  |   |
|--|---|
|  <p>Dark Gray - Part Number Ti482</p>       |  <p>Clean White - Part Number Ti480</p> |
|  <p>Electronic Blue - Part Number Ti483</p> |  <p>Pale Gray - Part Number Ti481</p>   |



**Specifications:**

|   |                                      |
|---|--------------------------------------|
| Average Surface Resistivity Point to Point (PTP per ESD S 7.1)  | >2.5E04 <3.5E07                      |
| Average Electrical Resistance to Ground (RTG per ESD S 7.1)   | >2.5E04 <3.5E07                      |
| 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 <sup>2</sup> , 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 <sup>2</sup> , 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                                 |
| 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 for details.



**Testing and Certification:** All 40220 HSB or HSC Mats and their associated ground cords are individually tested using NIST in compliance test instruments by technicians adept at testing to methods clearly defined and published by the ESD association. Please visit ESDA.org for details on their mission.

Titanium series 40220 matting is warranted for absolute compliance to ANSI ESD S20.20-2021 standards. An optional Certificate of Compliance Verification (COC) is available for a minor upcharge of \$35.00 per mat.

### **Warranty**

**WARRANTY:** These mats are warranted for Lifetime Static Control Performance and compliance to ANSI ESD S20.20-2021.

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.

Initial release of this document: 09/0716.

Revision date: 1/31/19 (added option for NIST certification).

Revision date: 11/01/21 (SSL applied)

Revision date: 9/26/23, rewritten for conformance to ANSI ESD S20.20-2021

Approved: SRC 9.26.23

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