staticWorx®
GroundSafe® ESD Flooring

FREE

GroundSafe® Flooring Program

Pre- and post-installation testing & certification

What is GroundSafe?

Our StaticWorx GroundSafe Flooring Program is a free testing program to certify that your ESD floor meets electrical standards for your industry.

Through our GroundSafe certification program, StaticWorx provides, free of charge, the equipment and guidance you need to qualify floors under consideration and allows you to verify the electrical resistance of your ESD floor after it's been installed.

Most people recognize the need to perform qualification tests for floors under consideration. Static-control requirements vary by industry. Testing tells you whether or not the floor you're evaluating meets those standards and measures how safely and effectively the flooring material will transport charges to ground.

Industry standards, which require adherence to ASTM F150 and ANSI/ESD STM 7.1, also require verification (post installation) testing. Post-installation testing confirms that the flooring system meets standards and buyer expectations.

Despite those requirements, post-installation testing is often overlooked. Maybe the buyer is in a hurry to move into the space. Maybe they don't see the value in testing a floor after it's been installed. Maybe they trust the specifications provided by the flooring manufacturer. Maybe they believe qualification tests are enough and the results won't change. Regardless of their reasoning, the decision-maker likely has no idea how greatly flooring systems are impacted by site conditions, such as:

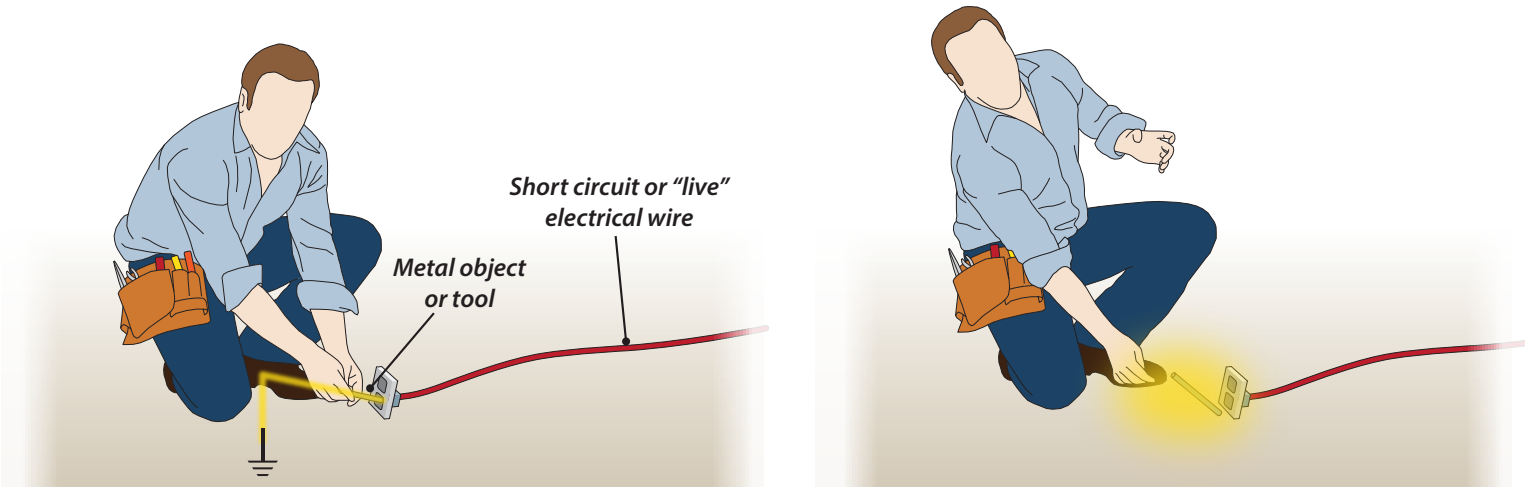
- Grounding methods
- Adhesive dry times
- Amount of adhesive used
- Method of installation
- Relative humidity and dew point
- Vapor in concrete
- The placement of grounded items like consoles and servers on the floor
- Types of subfloors and their resistance to ground

If you purchased a conductive floor for an SMT or manufacturing facility, and you have mandates in place requiring the use of special ESD footwear, you want to be sure your floor is conductive, as specified, and meets ANSI/ ESD standards for the application.

Similarly, if the flooring system fails to meet your specifications it may not perform as you'd hoped or intended. Suppose you specified a static-dissipative floor to meet safety standards for a PSAP, telecom application, flight tower, bank, or any end user space where people work with or near electrified equipment. For these applications, a floor that's conductive violates industry standards. Testing will tell you if your new floor meets safety standards for your industry.

Installation team installing a vapor barrier before laying tile.

Worker on an overly conductive floor



THE REAL COST OF FLOORING FAILURE

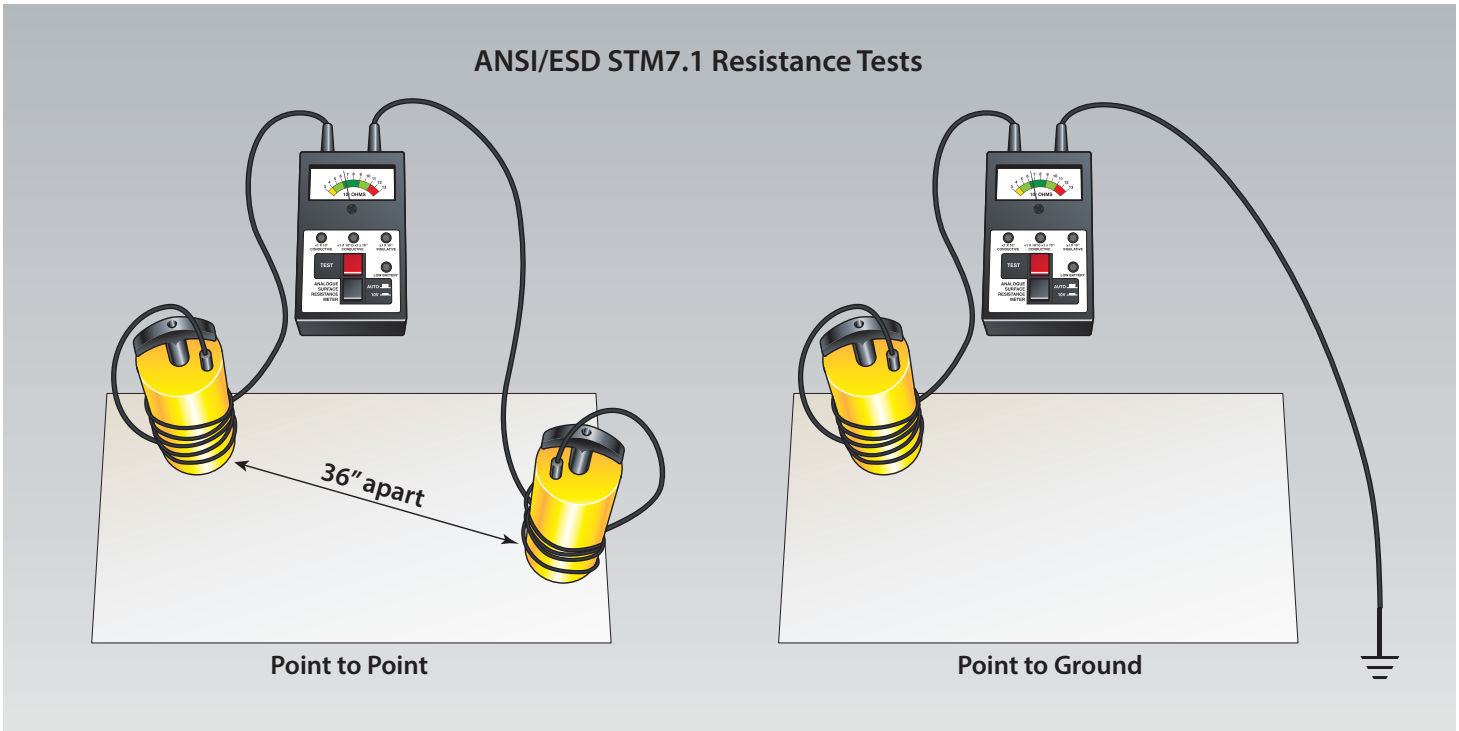
Too often when a floor fails post-installation testing the floor is ripped up and replaced, with costs recouped via a law suit or settlement – both of which cost time, money, and aggravation.

SAVE TIME, MONEY AND AGGRAVATION BY TESTING PRE- AND POST-INSTALLATION

To reduce the chances of the installed floor failing to meet your requirements, specifiers and/or end users should always conduct their own qualification tests by building a mockup in the installation space. The floor can also be tested by an independent lab.

Never rely on manufacturer's specifications to qualify an ESD flooring system. Manufacturers perform their tests in a lab set up to verify expected results. This means, the data used to qualify and characterize your floor as either conductive or static dissipative is collected in a literal vacuum – with no consideration for variance in site conditions.

Manufacturer's specifications are the results of tests performed in a lab. It's not enough to simply trust them. Tests need to be performed in a real-world setting.

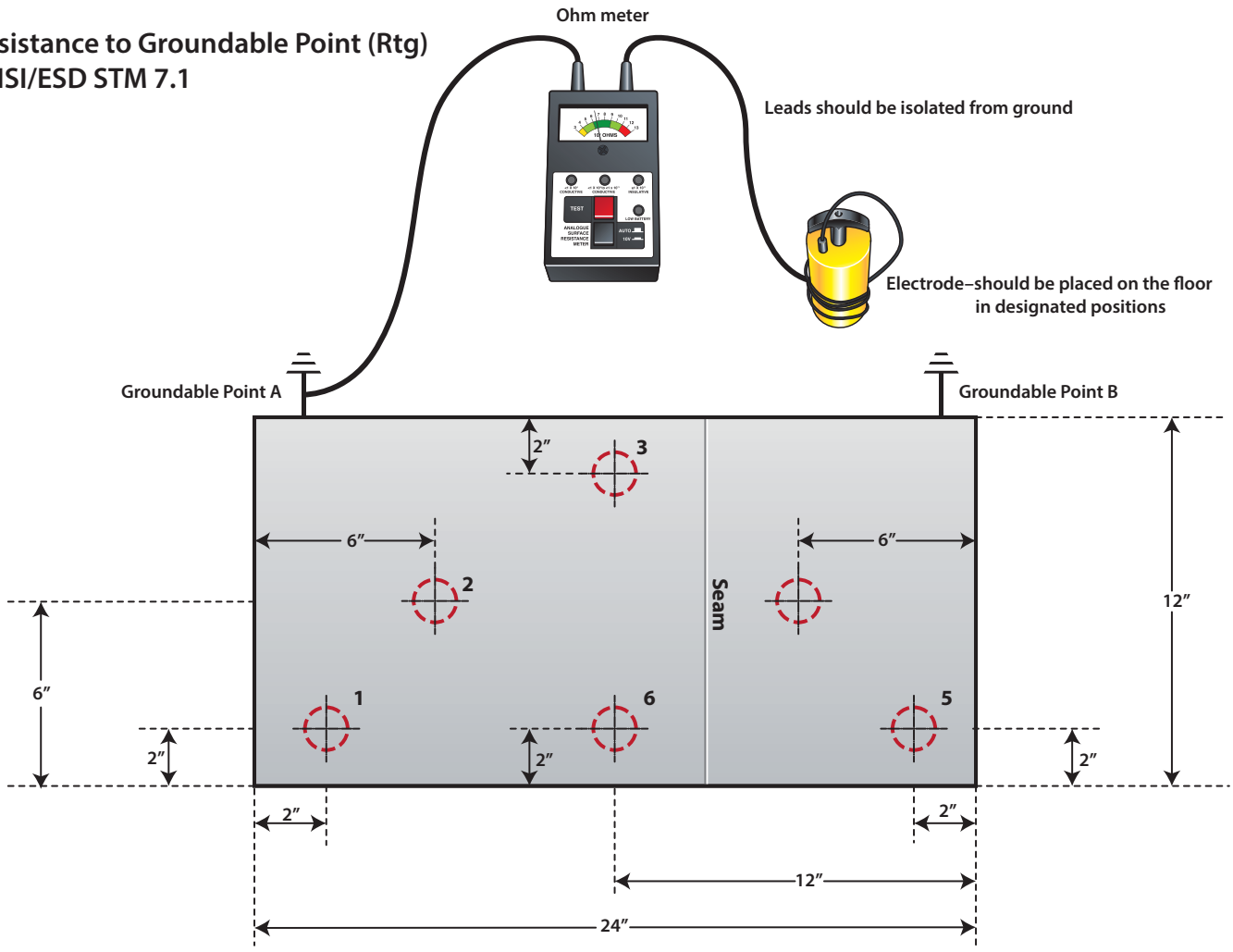


HOW CAN I ENSURE THAT A POST-INSTALLATION TEST WILL BE PERFORMED PROPERLY?

Upon project completion the supplier should arrange a post-installation resistance test session to identify and quantify grounding connections.

Using an ohm meter the representative should measure resistance to ground from the flooring surface to the flooring manufacturer's designated ground connection. Measure resistance in at least 5 different locations between electronic equipment chassis or metal contact surfaces and the surface of the flooring installed directly below.

Resistance to Groundable Point (Rtg)
ANSI/ESD STM 7.1



*Per STM7.1-2013: "If the installed product has seams, then the test material must include a seam."

TESTS THAT DON'T ACCOUNT FOR ENVIRONMENTAL CONDITIONS CAN BE FAULTY

The material samples manufacturers use to characterize a floor as conductive or dissipative are small with ground connections installed in a specific manner to suit the manufacturer's purposes. For example, some manufacturer's install conductive tiles with static-dissipative adhesive, using a sort of sandwich strategy that has no effect on the flooring material, but can alter system measurements.* In a perfectly dry lab setting it's very possible that this type of flooring system will appear to measure as static-dissipative. Installed on concrete in a high-humidity environment, the same floor can measure in the conductive range.

* *System measurements take into account flooring material, conductive adhesive or other underlying ground plane, the person walking on the floor, and the shoes he or she is wearing.*

Electricity flows through all available paths to ground.

ELECTRICITY FLOWS THROUGH ALL PATHS TO GROUND

A myth about grounding: "electricity flows to ground through the path of least resistance." In reality, electricity flows to ground through *all* paths – intended and unintended.

Picture a bucket of water with different sized holes. Will water leak only from the largest hole? Of course not. It will leak through all holes until the water is gone. The larger the hole, the more water will flow through – still, water will pass through every single hole.

Ground connections work the same way. Connections with lower resistance transport more electrical current, but current will flow through all connections in proportion to their respective resistance. In other words, electricity will flow through every grounding connection – not just the connection the flooring manufacturer instructed you to use for your verification testing.

WHERE PROBES ARE PLACED MATTERS

Where you place the probes also influences electrical resistance to ground. Test methods like ASTM F150 and ANSI/ESD STM 7.1 are based on testing resistance to ground using the manufacturer's designated grounding method. That's because the intent of these tests is to verify results performed in the lab – not look for ways to contradict lab results.

THE IMPORTANCE OF POST INSTALLATION TESTING

What if people in your facility work with or near electrified equipment that could become unintentionally grounded - by a short circuit, for instance? In the qualification lab there's one ground connection: the manufacturer's. In the real world, it's highly likely that the manufacturer's is not the only ground connection. As noted, electricity flows through all available paths to ground. Conductive flooring can, in fact, be grounded by electrical components sitting on it. Resistance values of tiles under grounded equipment are often quite different – and lower – than resistance to ground of tiles in the middle of the space.

Doesn't it make sense, then, to test the resistance to ground of tiles/sections of flooring that lie below and/or beside operational equipment?

GROUNDSAFE ACCOUNTS FOR ALL VARIABLES

GroundSafe post-installation verification testing accounts for all the variables in your space and tells you where and how electricity will find its way to ground. With GroundSafe verification, you'll know for sure whether or not the ESD floor you specified and purchased is the ESD floor you received.

Through our GroundSafe Flooring program, StaticWorx loans test equipment to anyone seeking to verify a StaticWorx floor. If you're not sure how to perform the tests and would like assistance, we'll walk you through it – either in person, in writing, or via a Zoom call.

For more information, or to arrange for your free loaner equipment, please contact us: 617-923-2000.

About StaticWorx

StaticWorx manufactures the highest quality ESD flooring products available today. Our company has installed tens of millions of square feet of ESD flooring throughout the U.S., Canada, Mexico, Australia, Singapore, New Zealand and the U.K.

Some of our clients include EMC Corporation, BAE Systems, Benchmark, Flex, Lockheed Martin, Microsoft, Philips Healthcare, Amazon, Apple, Intel, Google, and Facebook.

All StaticWorx products are made in ISO-9000 certified factories and undergo rigorous testing by independent laboratories prior to shipment.

For clients who prefer a worry-free project, StaticWorx will help choose the best floor for the specific application, match your project with our best flooring installation team, oversee the installation, and test your new floor's electrical properties to be sure the floor meets your specifications.

"The StaticWorx seminar may be the best AIA presentation I've sat through over the past 10 years. I recommend it to any architect or engineer that may have projects with static-control flooring."

Brian Frels
AIA, NCARB - Principal ARIUM ae

To schedule a Zoom ESD training session or AIA (architects') CEU workshop, please contact us at info@staticworx.com
Or call: 617-923-2000

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