



ELECTROSTATIC DISCHARGE ASSOCIATION

Setting the Global Standards for Static Control!

EOS/ESD Association, Inc. is frequently asked about humidity requirements for an ESD control program. This document provides more information and answers some of the frequently asked questions regarding humidity in an ESD control program.

Q: Is humidity a requirement in ANSI/ESD S20.20?

A: Humidity control is not an ANSI/ESD S20.20 requirement. Materials and items used in an ESD control program that meet EOS/ESD Association, Inc. and IEC standard test are tested in environmental conditions of 12% \pm 3% relative humidity at 23 °C \pm 3 °C during product qualification.

Q: What if our program specifies humidity conditions as an ESD control.

A: If your company's ESD control program plan specifically mentions humidity control levels, it must be monitored and there must be objective evidence to indicate that. There also needs to be a procedure on how the process reacts when humidity is outside the specified range. If humidity is not specified in your ESD control program plan, monitoring humidity levels is optional but a good practice.

Q: What do I do if the humidity levels in my facility are lower than the environmental conditions of 12% \pm 3% relative humidity called out in the EOS/ESD Association, Inc. standard test methods for ESD control item qualification?

A: All ESD control materials and items used in your facility must work at the lowest humidity level experienced at the facility or at least 9% to 15% relative humidity. If your facility experiences humidity levels lower than 9%, it is recommended to verify that the ESD control items still function properly at the lowest level experienced at the facility. Materials such as flooring, worksurfaces, garments, wrist straps, packaging, etc. that meet EOS/ESD Association, Inc. and IEC standard test methods should work at even lower humidity levels, but it is best to verify. This can be done with random resistance to ground testing on workstation items during extremely dry days.

Q: So why doesn't the EOS/ESD Association, Inc. require humidity control as part of the ESD control program?

A: ASHRAE had commissioned studies on humidity and electrostatic control. While it shows humidity does help in the reduction of charge accumulation, it also shows that it does not control charge accumulation to reduce risk to sensitive items. The differences in electrostatic charge accumulation on insulators from 20% to 30% RH at room temperature are minor. But the primary reason that humidity is not part of the control program is the fact that ANSI/ESD S20.20 (as well as IEC 61340-5-1) requires that the qualification of all ESD control items be at 12% \pm 3% relative humidity at 23 °C \pm 3 °C.

As a result, the EOS/ESD Association, Inc. is not relying on humidity as part of a control program in ANSI/ESD S20.20.

Please send an email to info.eosesda@esda.org if you have additional questions regarding humidity controls in your ESD control program.