

ESD Open Forum

Conformity—2009

Provided by the ESD Association

Q: Our company, which is qualified to ANSI/ESD S20.20 – 1999 is going to be qualified to the 2007 version next year. Can you explain what the differences are between the standards?

A: Thank you for your question. While there are some differences between the 1999 and the 2007 version of the standard, for the most part you will not have to make major overhauls to your process to conform to the 2007 standard. Let's look at the changes between the two standards and then you can decide if you need to change your process.

The first change you may notice is that all the guidance sections of the 1999 standard have been removed. The information is still available in ESD TR 20.20-2008. These sections were removed to avoid confusion with actual requirements. Guidance sections were never meant to imply requirements, only information. However, there has been some confusion in the industry with the misunderstanding that guidance was part of the requirements. The guidance information and much more can be found in TR 20.20.

The limits in the 20.20 standard were changed from recommended in the 1999 version to required limits in 2007. This change will not affect any programs that have always maintained the limits of ESD control items within the 20.20 limits. The limits themselves have not changed at all from the 1999 version to the 2007 version. One misconception is that if the program has tighter limits than 20.20, a tailoring statement is required. As long as the company requirements are within the 20.20 requirements, a tailoring statement is not required. For example, the lower resistance limit in 20.20 for items such as worksurfaces is 0 ohms, resistance to ground. Many programs have a lower resistance limit of 10^5 to 10^6 ohms. These programs are still within the required limits of 20.20 and are still compliant. These programs do not require a tailoring statement. If an ESD control program has limits that exceed the current 20.20 – 2007 limits, for example a worksurface that has an upper limit of 10^{10} ohms and if the equipment is not going to be changed, then a tailoring statement will be needed to document the reasons for exceeding the limits.

An addition to the 20.20 standard is the reference to ESD TR53-01-06. This document has the general compliance verification testing procedures that should be used to verify ESD control items. ANSI/ESD S20.20 requires that companies set up their compliance verification testing similar to ESD TR53-01-06. It is not required to be exact but the general testing as outlined in ESD TR53-01-06 need to be followed. If there are differences in a company's compliance verification procedures, a tailoring statement needs to explain the technical justification for the different testing methods.

One item that has been eliminated in ANSI/ESD S20.20-1999 is the reference to humidity controls. Humidity controls were always an optional requirement in the 20.20 standard. It was removed from the current version for two reasons. The first reason was the misuse of the humidity controls by assessors and other companies. It was often written up as a non-conformance even though it was only optional. Second, there is not a

standard that requires humidity to be at a certain level for an ESD control program. In fact, most items must be qualified to low humidity levels according to ANSI/ESD S20.20.

A significant change to ANSI/ESD S20.20 is the requirement of product qualification to the standard. This requires that items brought into a compliance process be tested to ESD Association standards to ensure that products will perform as intended. While this may seem like a formidable task, in fact there are many ways to accomplish this. A simple review of the specification sheet from the manufacturer that shows that testing is done per the ESD Association standards, and the products meet the required limits would be one way of accomplishing qualification. Testing done by an internal test lab that produced a report would be another way. A third way would be to have an external lab do the testing per the ESD Association standards. If other standards or test methods were used, then a technical justification would be required for qualification. One set of standards that would be considered technically equivalent would be the IEC 61340 series of standards. If the products that are in use are no longer manufactured, then a grandfathering statement could be used showing that the compliance verification data as a way to qualify products. This should only be used if the supplying company has gone out of business; or the products have been discontinued.

The tables in the 2007 update were also reformatted and separated for clarity. One item that was not changed but clarified was the requirement for the use of footwear/flooring systems. Here, there are two methods that can be used to qualify the static control process. In the first method, a system resistance test is used to qualify the footwear/flooring system. A resistance from the tip of the finger to ground of less than 3.5×10^7 ohms is enough to ensure a person does not charge above 100 volts. In the second method, the total resistance must be less than 1×10^9 ohms but a walking test is required to ensure that the person is kept below 100 volts. Once the system is qualified, simple resistance tests for the floor and footwear are the only things required for the compliance verification procedure.

The standard now allows for three different kinds of grounding/bonding but they must be written into the ESD control document. In fact, all the different kinds of grounding/bonding may be used as long as it is clear in the documentation which method is used in the process. Also, in conjunction with the grounding section, ANSI/ESD 6.1, Grounding, allows the use of floors to ground ESD control items such as people, carts, chairs and workstations.

An addition to the standard is now a requirement to name an ESD coordinator. This is generally the person in charge of the program. This position does not need to be a manager but has to have the responsibility to implement the program.

These are the major changes to the ANSI/ESD S20.20 standard. For more information, read the standard which can be downloaded from www.esda.org, purchase TR20.20 or send a question to info@esda.org.

About the Author

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About the ESD Association

Founded in 1982, the ESD Association is a not for profit, professional organization directed by volunteers dedicated to furthering the technology and understanding of electrostatic discharge. The Association sponsors educational programs, develops ESD Standards, holds an annual technical symposium, and fosters the exchange of technical information among its members and others. Additional information may be obtained by contacting the ESD Association, 7900 Turin Rd., Bldg. 3 Rome, NY 13440-2069 USA, Phone 315-339-6937, Fax 315-339-6793. Email info@esda.org.
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