

NEW 2024 UPDATE TO 61340-5-1 FOR ESD CONTROL

The new electrostatics international standard has been released, **IEC 61340-5-1:2024 Electrostatics – Part 5-1: Protection of electronic devices from electrostatic phenomena – General requirements**, replacing the previous 2016 standard.

Changes appear developmental rather than transformative, including additional definitions and updates to current requirements to help the user implement the standard with more clarity.

Having studied the 2024 standard in detail, SSE have identified the following key updates:

Definitions

Definitions have been updated or added to provide more clarity and understanding. Examples are as follows:

- 5.1.2 ESD Coordinator (2016) is updated to **ESD Control Program Manager or ESD Coordinator**. The alternative title of ESD Control Program Manager acknowledges the role as managing the ESD Control Program. The title ESD Coordinator is still acceptable.
- 5.3.4.2 Insulators is updated to specifically define an insulator as materials and objects with a resistance greater than or equal to $1.0 \times 10^{11} \Omega$ (IEC 61340-2-3). The ESD control program shall include a plan for handling insulators to mitigate field induced damage.
- 5.3.4.3 Isolated conductors is updated with the specific definition of materials and objects with a resistance less than $1.0 \times 10^4 \Omega$ (IEC 61340-2-3).

Product Qualification (5.2.3)

Product qualification is the process of establishing that an ESD control item will achieve the required result and meets 61340-5-1. It shall occur during the initial selection of the ESD control item and before initial use.

The new 2024 standard takes product qualification a step further with the requirement of a **Product Qualification Plan**. The plan will include, but not limited to, the following:

- ESD control item type
- Qualification method used (see below)
- Test method used (Tables 2, 3 & 4)
- Test limits
- Environmental conditioning required for the test
- Location of qualification records

Compliant Qualification Methods

- a) Product specification review (manufacturer data sheets)
- b) Independent laboratory evaluation
- c) Internal laboratory evaluation

Organisations can still verify ESD control items before implementing 61340-5-1 using compliance verification records (12 months + immediately prior to implementation).

Compliance Verification (5.2.4)

61340-5-1 requires a Compliance Verification Plan documenting which ESD process monitoring (measurements) are to be performed, the nature of the measurement test, measurement limits to be achieved, and the frequency of tests.

To simplify compliance verification requirements, Table 3 – EPA technical requirements has been updated to reference **61340-5-4: Protection of electronic devices from electrostatic phenomena – Compliance verification**, across all ESD control items. The 2016 standard referenced 6 individual standards. This makes compliance verification simpler to manage and reduces the cost of having to maintain multiple standards.

Personnel Grounding (5.3.3)

Personnel grounding now includes reference to groundable static control garment systems (Table 2), including product qualification and compliance verification requirements relating to personnel grounding. Previously, groundable static control garment systems were included in Table 3 – EPA requirements. This change in classification has resulted in the required limits for product qualification and compliance verification dropping to $<3.5 \times 10^7 \Omega$ in 2024 from $<1.0 \times 10^9 \Omega$ in 2016.

Packaging (5.3.5)

Packaging has been expanded with the inclusion of new Table 4 – Packaging requirements. This summarises product qualification and compliance verification test methods and limits.

Annex A – Tailoring

Tailoring allows users of IEC 61340-5-1 to modify or delete a requirement if justified with technical rationale. Tailoring statements must be documented, generally in the ESD Control Plan, including the justification and technical rationale.

Annex A has been updated to include examples of acceptable tailoring statements and rationale to assist understanding.

Further information and where SSE can help

SSE provide **onsite compliance verification testing** for many companies who have ESD controls in place. Sometimes this may be a company fully outsourcing their compliance verification or sometimes an annual independent compliance verification of ESD control items to support internal testing for validation and internal/ external audits. [Click here](#) for more information.

SSE also provide onsite **ESD surveys** that offer an expert, independent, formal review and assessment of the static control equipment and procedures in place, based on the requirements of BS EN 61340-5-1. [Click here](#) for more information.

For internal testing, SSE supply a complete range of **test equipment** and accessories for your product qualification and compliance requirement, [click here](#).

For more information or for anything else we can help with, please [contact us](#).

July 2024