

# ESD Management



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## ESD Consultation

- On-site ESD inspection and analysis of weak points
- ESD risk assessment of machines and installations
- Introduction or update of the ESD control program

### ESD consultation

ESD safety prevents damage of your products caused by static charge. In an electronic manufacture there are many areas where static charge may occur. Especially in systems and machines conditions prevail leading to damage caused by ESD.

We analyze and evaluate the existing situation in your manufacture and support you to create or to complement your ESD control program in which you define and control the ESD protective measures according to your individual requirements. The scope of the consultation is agreed according to your needs.

In order to control the implementation and application of the ESD protective measures defined in the ESD control program, we offer you an auditing in compliance with valid standards. We also quote an on-site ESD basic training in handling ESD-sensitive modules for your employees.

We offer special topics like e.g. "ESD safety in machines and systems", also on-site.



### On-site ESD inspection and analysis

ESD risks can occur in different forms and situations. The production is subject to constant change. New machines and installations are installed and have to be evaluated in terms of safety. For this reason, regular ESD inspections and analyses of weak points for ESD protection have to be done.

Our experienced specialists are able to detect weak points of the ESD protection and recommend you necessary countermeasures and possible solutions. We have modern measuring devices for measurements, also in running production systems, to obtain informative measuring data. So it is possible to determine where ESD protective measures are required and how risky a process is.

At the same time the target/actual state of your ESD protective measures is established. The obtained findings and solutions should be integrated in your ESD control program.

The analysis can comprise your entire production or only individual partitions.

The ESD inspection is to extend and complement your ESD protective measures and increases the ESD safety.

We will consult you beforehand about ESD safety when planning and equipping new production areas.

The findings of the ESD inspections can substantially contribute to a reduction of the ESD risk.

### ESD risk assessment of machines and installations

Today, the electronic manufacturing is characterized by automatized production processes. Due to the progressive miniaturization manual processes are pushed into the background. High process speeds and complex processes as well as a simultaneous increase of the ESD sensitivity of components lead to a higher risk of ESD damage. At the same time the customers of electronics manufacturers demand high reliability of electronic modules.

In assembling and production processes many different materials are processed. Transport, stacking and removal processes take place. Every material movement is connected to static charge and ESD risks. These risks need to be detected and evaluated with measuring data.

Using modern measuring devices we analyze the installation to be evaluated during current real operation. We provide the results in a report. Afterwards, we offer you individualized proposed solutions for detected ESD risks.

### Introduction or update of the ESD control program

The basis of a functioning ESD protection is the introduction of an ESD control program according to the standard DIN EN 61340-5-1.

In the ESD control program you define the necessary ESD protective measures and determine their monitoring. The ESD control program has to correspond to the individual requirements of your processes and products. We consult and assist you competently with the creation of your ESD control program.

The ESD control program is the basis and a necessary prerequisite for the auditing.



**ESD Services**

**ESD Services:**

- Execution of regular ESD measurements and tests
- Calibration service of the measuring devices and tools
- ESD measuring service (we provide the measuring devices and execute the measurements for you)
- Product qualification according to DIN EN 61340-5-1

**Exection of regular ESD measurements and tests**

According to the standard the equipment of the EPA has to be checked and measured regularly. The measurements have to be recorded.

We take care of the execution of the annually recurring, regular ESD measurements and tests according to DIN EN 61340-5-1 or support you in doing this.

**Calibration service for the measuring devices and tools**

We offer a calibration service for the test and measuring devices we distribute.

**Product qualification according to DIN EN 61340-5-1**

In our modern laboratory we can execute ESD qualifications for ESD materials and products fulfilling the requirements of the standard DIN EN 61340-5-1.



**ESD Auditing**

**ESD auditing according to DIN EN 61340-5-1**

The ESD auditing verifies and certifies the ESD protective measures and processes defined in your ESD control program. Before the auditing it is useful to execute a pre-audit or at least an ESD inspection to detect early any deviations from the ESD control plan or to integrate modifications that have been made in the meantime.

**Pre-audit target/actual state**

The pre-audit is to prepare the auditing. As a rule the pre-audit is made at least three months before the main audit. During the pre-audit, as during the main audit, the ESD protective measures defined in the ESD control program are verified.

We provide you an overview of the current state of your ESD protective measures. Existing ESD protective measures are tested for their compliance with DIN EN 61340-5-1. All parts of the electronics manufacturing process are subject to a test from incoming to outgoing goods.

The documentation of the ESD control program is verified for correctness and completeness and is complemented in case of modifications. A report in the form of a check list documents the verification and shows potential week points and deficiencies.

**Auditing / re-certification according to DIN EN 61340-5-1**

During an audit the existing ESD protective measures are tested for their compliance with standards and application according to the indications of your ESD control program. The measures documented in the ESD control plan are verified.

The measurement records of the regular tests are reviewed and the observance of the measures provided in the ESD control plan are controlled.

Divergencies from the ESD control program are defined and recorded. If the auditor sees any room for improvement, he will give recommendations.

In an audit report the detections and the procedure are documented and the compliance of the ESD protective measures according to your ESD control program are certified considering the standards in force.



**Trainings and workshops**

The safe handling of the employees with electronic components and assemblies is important for the ESD protection. We offer you application-oriented trainings for your employee, responsible persons and managers:

- ESD basic training (on-site or via livestream online)
- ESD training "Technology and measurement"
- ESD specialist
- ESD coordinator training
- ESD training for management and decision-makers
- ESD workshop for special themes

All our training courses are based on the requirements of the ESD standards DIN EN 61340-5-1, IEC 61340-5 and VDE 0300.

**Train your employees right from the beginning**

It is necessary to impart the extensive topic "ESD safety" especially to sector newcomers in electronics industry and trainees. The correct personal behavior is decisive when handling electronic components to prevent any damage to the electronics.

All offered trainings promote the understanding of electrostatic correlations and effects and show how to apply ESD protective measures in a targeted way and to recognize ESD risks.

It is recommended, but also demanded by the aforementioned standard, to refresh regularly the expert knowledge of your employees. This prevents mistakes and renews as well as expands their knowledge.



**ESD Basic training (on-site)**



A safe handling with ESD-sensitive components and assemblies is a fundamental element of the ESD protection. The half-day ESD basic training will give the participants the necessary basics and practical knowledge for the ESD safety in production and assembly. The ESD basic training is suitable for new employees as well as apprentices and for a regular refreshing of the employees' knowledge. The training content can be adapted to the specific requirements of your company.

**The ESD basic training will take place on-site in your company and will be temporally adjusted to your training needs.**

**New employees do not need any prior knowledge. Offer: including inspection of the ESD areas**

Duration:

- half-day training
- an individual adaptation to your training needs is possible

Content:

- Basics of electrostatics
- Risks and damage caused by static charge and ESD
- ESD protective measures and effects
- ESD labeling
- Monitoring of the measures and documentation

Practical examples show the development of electrostatic charge and the effect of suitable ESD protective measures. All participants receive detailed training documents and a certificate of participation.

Target groups:

- Employees of the electronics manufacturing and device assembly
- Employees of the quality assurance
- Employees of the development, production scheduling, logistics
- Purchasing employees
- Young professionals of the electronics manufacturing and device assembly
- Apprentices and students having jobs in electronics industry

The training course is designed for up to 15 participants to obtain optimal training success.

Do you have any questions or would like to receive an offer?

Send an e-mail including your desired date to our sales team. Please indicate the number of participants and the training location in your inquiry.

[dpvlink 20151](#)



Article	Type
D-0050	<b>ESD basic training</b> up to 15 participants including training material and certificate of participation Dates by arrangement

**ESD Basic training (livestream online)**



A safe handling with ESD-sensitive components and assemblies is a fundamental element of the ESD protection. The half-day ESD basic training will give the participants the necessary basics and practical knowledge for the ESD safety in production and assembly. The ESD basic training is suitable for new employees as well as apprentices and for a regular refreshing of refreshing of the employees' knowledge. The training content can be adapted to the specific requirements of your company.

The participants take part in the online training via a link and the sent access data. No software has to be installed.

**A communication with the instructor is possible at any time. For this, an audio output e.g. headset with microphone is required. There is no travel, booking or lengthy preparation required.**

Duration:

- half-day training

Content:

- Basics of electrostatics
- Risks and damage caused by static charge and ESD
- ESD protective measures and effects
- ESD labeling
- Monitoring of the measures and documentation

Practical examples show the development of electrostatic charge and the effect of suitable ESD protective measures.

All participants receive detailed training documents and a certificate of participation.

Target groups:

- Employees of the electronics manufacturing and device assembly
- Employees of the quality assurance
- Employees of the development, production scheduling, logistics
- Purchasing employees
- Young professionals of the electronics manufacturing and device assembly
- Apprentices and students having jobs in electronics industry

We offer training for individuals or also for in-house groups. We can also agree to your desired dates.

Do you have any questions or would like to receive an offer?

Send an e-mail including your desired date to our sales team.

**dpvlink 24063**



Article	Type
D-0053	<b>ESD Basic training (livestream online) - company</b> Up to 15 participants. Including training material and certificate of participation
D-0054	<b>ESD Basic training (livestream online) - individual training</b> For individual participant. Including training material and certificate of participation  Conference system in use: Jitsi ( <a href="https://meet.dpv-web.de">meet.dpv-web.de</a> )

**ESD Training "Methods and measurements"**



The practically oriented training "Methods and measurements" is based on existing basics in the field of electrostatics and the knowledge of a potential danger for electronic components. The participants gain the knowledge how to carry out measurements, document and evaluate the ESD control elements.

**The training "Methods and measurements" will take place on-site in your company and will be aligned to your training needs.**

Duration:

- the duration of the training orients to your training needs

Content:

- measurement basics
- measurement methods, electrical engineering
- measuring equipment
- demonstration of measurements
- evaluation of the measured values
- tips and tricks

We train your employees in compliance with the standards and provide them the knowledge to support with their work your ESD coordinator when executing measurements.

Every participant receives training materials and a certificate of participation

Target groups:

- specialists with technical understanding
- employees of the quality assurance

How and when can you book the ESD training "Methods and measurements"?

We offer the training as an on-site training in your company. Here, we are responsive to your individual desired dates.

Do you have any questions or would like to get an offer?

Your are welcome to contact our sales team, indicating your desired date.

**dpvlink 24137**



Article	Type
D-0060	<b>ESD Training "Methods and measurements"</b> up to 12 participants including training material and certificate of participation

## ESD Specialist



The ESD specialist knows the connection in the field of ESD and the effects of ESD protective measures. He/she gains the knowledge how to carry out measurements to verify, document and evaluate the ESD control elements. With his/her work, he/she will support your ESD coordinator.

**The ESD specialist training is a one-day training comprising theoretical and practical contents.**

Duration:

- one-day training

Theoretical contents:

- basics of electrostatics
- risks due to static charge
- ESD protective measures
- ESD control program

Practical contents:

- introduction
- knowledge about ESD protective measures
- measurement of ESD protective elements
- documentation and evaluation of the measurement

We train your employees in compliance with the standards and provide them the knowledge to support with their work your ESD coordinator in the monitoring and observance of all measures.

Every participant receives training materials and a certificate of participation.

Target groups:

- specialists with technical understanding
- employees of the quality assurance

How and when can you book an ESD specialist training?

We offer several dates for ESD specialists in different junctions in Germany during the year.

Of course, we also offer on-site trainings in your company. Here, we are responsive to your individual desired dates.

Do you have any questions or would like to get an offer?

Your are welcome to contact our sales team, indicating your desired date.

dpvlink 24134		
Article	Type	
D-0070	<b>ESD specialist, workshop on-site in the company</b> up to 12 participants including training material and certificate of participation	
	Dates by arrangement	
D-0071	<b>ESD specialist, workshop in different junctions in Germany</b> up to 12 participants including training material and certificate of participation	
	Current dates for this training can be found under "Dates" Further dates on request	

## ESD Coordinator workshop according to DIN EN 61340-5-1



An ESD control program structured according to DIN EN 61340-5-1 requires the appointment of an ESD coordinator given the responsibility to implement the requirements of the standard. For this purpose, we regularly offer coordinator workshops. The essential contents are among others ESD basic knowledge, measurement of ESD control elements, knowledge about the analysis of working areas and documentation in the ESD control program plan.

A good understanding for electrostatics ensures optimal training success.

**The ESD coordinator workshop comprises theoretical and practical contents.**

Duration:

- one-day training

Theoretical contents:

- basics of electrostatics
- risks and damage
- ESD protective measures
- ESD control program
- ESD packaging
- labelling
- monitoring and analysis
- reference to the quality management ISO 9001
- ESD audit according to the requirements of IEC 61340-5-1

Practical contents:

- practical examples for workplace analysis
- application of different measuring methods
- documentation and evaluation of the measurement results

We train your employees in compliance with the standards to prepare them for their new task as an ESD coordinator enabling them to introduce and check the measures according to DIN EN 61340 in your company.

Every participant receives detailed training materials and a certificate of participation.

Target groups:

- persons responsible for ESD areas
- technical purchasers

How and when can you book an ESD coordinator training?

We offer several dates for coordinator workshops in different junctions in Germany during the year.

dpvlink 24132		
Article	Type	
D-0080	<b>ESD Coordinator workshop according to DIN EN 61340-5-1</b> up to 15 participants including training material and certificate of participation	
	Current dates for this training can be found under "Dates" Further dates on request	

## ESD Training for management and decision-makers



The ESD training for management and decision-makers is focused on risk assessment as well as product liability and commercial aspects.

ESD protection influences the quality of the products and the manufacturing. A defective ESD protection leads to a reduction in quality and complaints of your customers. These aspects are often insufficiently considered.

**The ESD training for management and decision-makers will take place on-site in your company and will be aligned to your training needs.**

Duration:

- the duration of the training is adapted to your training needs

Contents:

- risk assessment
- product liability
- quality influences
- complaints in connection with ESD protection

Every participant receives training materials and a certificate of participation.

Target groups:

The training is addressed to all persons having decision-making competences for areas where ESD-sensitive components and devices are handled


- management
- heads of the development department
- technical directors
- quality management
- technical purchase

How and when can you book an ESD training for management and decision-makers?

We offer the training as an on-site training in your company. Here, we are responsive to your individual desired dates.

Do you have any questions or would like to get an offer?

Your are welcome to contact our sales team, indicating your desired date.

<b>dpvlink 24130</b>		
Article	Type	
D-0081	<b>ESD training for management and decision-makers</b> up to 12 participants including training material and participation certificate	
	Dates by arrangement	

## VDE series electrostatics

### ELEKTROSTATIK Ursachen, Wirkungen, Schutzmaßnahmen, Messungen, Prüfungen, Normung

The book gives you an overview of possible sources of electrostatic charges and their effects as well as protective measures against electrostatic charges and discharges. Measurement methods for the choice of materials and the currently valid standards are presented. The book addresses to planners and operators of production sites of electronic components and devices, to employees of manufacturing sites, to equipment manufacturers and to service technicians.  
(available only in German)



<b>dpvlink 592</b>		
Article	Type	
ESD.VDE.B-4	<b>VDE book Elektrostatik volume 71</b> 4th updated edition, 2017 - only available in German	

## CD ESD - The invisible lightning bolt

### ESD - The invisible lightning bolt: damages caused by electrostatic discharge and how to avoid them.

"The invisible lightning bolt" treats the difficulties of electrostatic discharges (ESD) in the semiconductor industry. With examples of static charging and discharging possibilities the awareness to ESD will be sharpened. Furthermore, the film shows examples from the Infineon semiconductor sector for ESD protection and the necessary requirement concerning furnishing, equipment of the employees, packaging, machines and handling instructions.

CD-ROM with video file (MPEG) for PC, play time approx. 13 minutes, language English



<b>dpvlink 594</b>		
Article	Type	
ESD.7901.CD.e	<b>CD ESD - The invisible lightning bolt</b> ESD Video clip, English	

