

# ***Impartial Measurement Service for Controlling ESD Protection***

Third party service is economical choice for establishing quality control. Our mission is reducing customer's fixed costs and unnecessary investments. We can help to release customer's resources to the core business. We offer international and inter-company knowhow in very competitive price.

## Compliance verification

Measurements will be carried out in accordance with compliance verification plan. Reporting includes summary of results, figures, tables, graphs, necessary statements of uncertainty and suggestions for improvements. Defects will be categorized and presented in order of importance.

## Qualification of floorings

Resistance to ground and person/footwear system is measured in accordance with IEC 61340-4-1 and IEC 61340-4-5. Reporting includes summary of results, figures, tables, graphs, necessary statements of uncertainty and suggestions for improvements. Defects will be categorized and presented in order of importance.

## Qualification of ESD protective items

This offer includes measurements to be carried out by two different methods in controlled environment  $RH = (12 \pm 3) \%$ ,  $T = (23 \pm 2) ^\circ\text{C}$ . At least ten measurements will be made per chosen methods according to IEC and ANSI standards, if not otherwise agreed. Reporting includes summary of results, figures, tables, graphs, necessary statements of uncertainty and suggestions for improvements. Defects will be categorized and presented in order of importance.

## Advanced level ESD training

Training for maximum 30 persons will be tailored according to customer's requirements and target groups. Training is mainly directed for steering groups, reliability and quality engineers, process owners, ESD control program managers and coordinators. Theoretic presentations will be illustrated by practical demonstrations.

## Laboratory measurements

Laboratory service is directed to electronics-, chemical-, automotive and pharmaceutical industries. Testing will be carried out in accordance with ISO/IEC/EN 17025 "General requirements for the competence of testing and calibration laboratories" Most of the measurements are made in standard conditions after 48 h preconditioning ( $12 \pm 3$ ) % RH, ( $23 \pm 2$ ) °C. Typical measurements related to electrical conductivity are surface- and volume resistivity, voltage dependency, breakdown field strength, orientation of resistivity, percolation, point to point resistance and resistance to groundable point. Triboelectric behavior and charge relaxation can be studied from solid objects and powder. Charging method in decay measurements is based on corona ionization, tribocharging, induction or direct connection depending on the purpose of the study. Reliable and repeatable characterization of electrostatic properties of solid planar or shaped objects is carried out in a changing electrostatic field. Reporting includes summary of results, figures, tables, graphs, necessary statements of uncertainty and suggestions for improvements. Defects will be categorized and presented in order of importance.

## Third party audits and assessments

Impartial assessments are sometimes essential for finding objective improvements for ESD protection. On-site audit or assessment will be made during working hours in a day. Summary of results, figures, tables, graphs, necessary statements of uncertainty and suggestions for improvements will be reported after on-site audit. Defects will be categorized and presented in order of importance.

## ESD risk assessment

This service is also directed to electronics-, chemical-, automotive and pharmaceutical industries. ESD risks will be measured and analyzed systematically during two days. Summary of results, figures, tables, graphs, necessary statements of uncertainty and suggestions for improvements will be reported after on-site measurements. Defects will be categorized and presented in order of importance.

## Optimization of ESD control program

Optimization service includes two days assessment, control- and laboratory measurements for objective analyses. Summary of results, figures, tables, graphs, necessary statements of uncertainty and suggestions for improvements will be reported after on-site assessment. Defects will be categorized and presented in order of importance.

## Creation or upgrading ESD control program

ESD control program plan will be upgraded to fulfill the latest standard requirements, product- and process requirements and customer requirements. Two days on-site meeting is required. Client shall prepare to answer questions during one week. Creation a new program is often more efficient than upgrading the old one. Program will be ready in a month from the order.

## Dust control and electrostatic attraction (ESA)

Studies for dust control and contamination are case specific. Let's make the test plan together!

## Calibration of measuring equipment

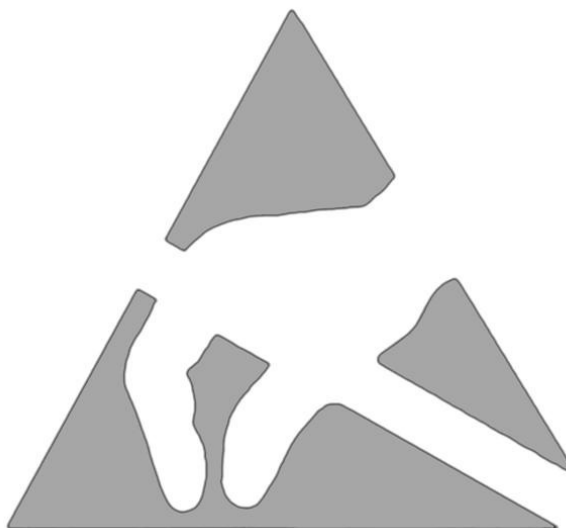
Calibrations will be made when relevant in accordance with ISO/IEC 10725.

## Partial or complete outsourcing of ESD protection

Partial or complete outsourcing is often the most economical choice for controlling ESD protection.

***Please ask us a quotation!***

***Working periods will be estimated together with you according to your needs!***



## ***Cascade Metrology Oy***

Cascade Metrology Oy is a company specialized in controlling protection against electrostatic discharge, ESD. We are focusing on chemical and electronics industries providing economical benefits for our customers in tasks and issues related to ESD protection. We do not resell. We have enhanced instrumentation for electrostatic measurements. Our laboratory services are based on ISO/IEC 17025 "General requirements for the competence of testing and calibration laboratories". We are able to perform measurements according to IEC and ANSI standards. In addition we are experienced in development of non-standard test methods for case specific purposes.