QUALIFICATION DATA SHEET: Protocol record and summary sheet

Introductory data

Serial number of the document:	
EMJL20170912_1ESD_Dr.Schutz	
Sample data:	
Manufacturer:	Flooring surface coated with Dr Schutz materials
Model number:	See Annex I.
Size/pcs.:	14 pcs Samples
Colours:	See Annex I.
Sample photo:	
See Annex I.	
Rating details:	
Type of rating:	Testing of flooring samples coated with Dr Schutz ESD Coatings in accordance with EN 61340-5-1:2016 and ANSI 20.20:2014 norms
Revision date:	2017.09.12.

Customer detail:	
Company:	Dr Schutz Group GmbH
Name:	Iakab Alpar
Position:	Product Manager ESD Coatings
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Details of the qualifying officer:	
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The test report was verified:	
Name:	Godó Attila
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Conditions in the climate chamber:	
1st measurement	
Temperature:	23.5 C°
Humidity:	49.0 %
2nd measurement	
Temperature:	-
Humidity:	-
3rd measurement	
Temperature:	-
Humidity:	-

Content of the qualification report

QUALIFICATION DATA SHEET: Description of the sample, brief introduction and summary

ANNEX I. Measurement results obtained during the certification of the sample

Important! The qualification report is complete and valid only in the presence of all attachments.

Notes

Preparation of samples: 50%±2% RH, 23°C±2°C 48 hours and 72 hours

QUALIFICATION DATA SHEET: Protocol record and summary sheet

Refference documents

IEC 61340-5-1:2016 - Electrostatics – Part 5-1: Protection of electronic devices from electrostatic phenomena – General requirements

ANSI-ESD S20.20:2014 - For the Development of an Electrostatic Discharge Control Program for – Protection of Electrical and Electronic Parts, Assemblies and Equipment (Excluding Electrically Initiated Explosive Devices)

Data of the measuring instruments used during the review

Type	Model	Serial number	Calibration name:	Calibration number:	Calibration validity:
Megohmmeter	AIJGO-61	0022	Kalibra 59	K/62092	2018.02.28.
Temperature and humidity meter	AIJGO-61	22	Kalibra 59	K/62092	2018.02.28.

Measurement Parameters and Legend

R_{p-p}	Point to point resistance
R_{gp}	Point to grounding resistance
$R_{sys.}$	System resistance

Summary

Based on qualification measurements carried out under normal environmental conditions, it can be concluded that the flooring samples coated with the Dr Schutz ESD Sealers meet the requirements of IEC 61340-5-1:2016 and ANSI/ESD 20.20 International ESD standards. From the measurements made with the copper grounding electrode it can be stated that from the ESD point of view, the surface treatment with Dr Schutz coatings improves the homogeneity of the floors independently of the layer system,so that floors properly ground the mobile devices like wagons, charts, chairs, etc. The results also show that the test surfaces coated with Dr Schutz ESD coatings improve the suitability of floor and human system resistance.

Date of completion of the report:	2017.09.22.

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ESD audit and measuring report and Qualifier sheet

Measurement results	Register number:	EMJL20170912_1ESD_Dr.Schutz	Review date:	2017.09.12.

Type of ESD floor for tests			Required measurement results			Comparison of measured results									
Sample number	Floor type	Measured points	Measurement types	Limits		Mesurement 1			Measurement 2			Measurement 3			Notes
						Date:	2017.09.12.		Date:	2017.--.--.		Date:	2017.--.--.		
				Low	High	Measured value	Unit	Compliance	Measured value	Unit	Compliance	Measured value	Unit	Compliance	
Sample 2017_01	Material: **STO POX KU 615** (original flooring) **Dr. Schutz material layout: ESD Color Base 2 coats ESD TopCoat 1 coat**	between points 1 and 2	R_{p-p}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	173	kΩ	OK	-	-	-	-	-	-	Original floor
		between points 3 and 4	R_{p-p}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	298	kΩ	OK	-	-	-	-	-	-	Coated floor
		between points 5 and 6	R_{p-p}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	278	kΩ	OK	-	-	-	-	-	-	
		between points 9 and 7	R_{p-p}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	111	kΩ	OK	-	-	-	-	-	-	Relation between the original and the coated floor surface
		between point 9 and grounding	R_{gp}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	98.4	kΩ	OK	-	-	-	-	-	-	Original floor
		between point 7 and grounding	R_{gp}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	879	kΩ	OK	-	-	-	-	-	-	Coated floor
		between point 9 and grounding (copper earth electrode)	R_{gp}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	100	GΩ	NOK	-	-	-	-	-	-	Original floor
		between point 7 and grounding (copper earth electrode)	R_{gp}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	9.41	MΩ	OK	-	-	-	-	-	-	Coated floor
		System measurement to original floor	$R_{sys.}$	-	$1.0\times10^9\ \Omega$	13.8	MΩ	OK	-	-	-	-	-	-	Original floor
		System measurement to coated floor	$R_{sys.}$	-	$1.0\times10^9\ \Omega$	6.36	MΩ	OK	-	-	-	-	-	-	Coated floor
Sample 2017_02	Material: **STO POX KU 611** (original flooring) **Dr. Schutz material layout: ESD Color Base 2 coats ESD TopCoat 1 coat**	between points 1 and 2	R_{p-p}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	157	kΩ	OK	-	-	-	-	-	-	Original floor
		between points 3 and 4	R_{p-p}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	324	kΩ	OK	-	-	-	-	-	-	Coated floor
		between points 5 and 6	R_{p-p}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	900	kΩ	OK	-	-	-	-	-	-	
		between points 9 and 7	R_{p-p}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	110	kΩ	OK	-	-	-	-	-	-	Relation between the original and the coated floor surface
		between point 9 and grounding	R_{gp}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	25.7	kΩ	OK	-	-	-	-	-	-	Original floor
		between point 7 and grounding	R_{gp}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	26.4	kΩ	OK	-	-	-	-	-	-	Coated floor
		between point 9 and grounding (copper earth electrode)	R_{gp}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	100	GΩ	NOK	-	-	-	-	-	-	Original floor
		between point 7 and grounding (copper earth electrode)	R_{gp}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	277	kΩ	OK	-	-	-	-	-	-	Coated floor
		System measurement to original floor	$R_{sys.}$	-	$1.0\times10^9\ \Omega$	625	MΩ	OK	-	-	-	-	-	-	Original floor
		System measurement to coated floor	$R_{sys.}$	-	$1.0\times10^9\ \Omega$	7.74	MΩ	OK	-	-	-	-	-	-	Coated floor

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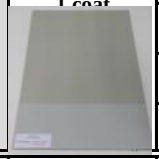
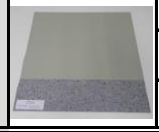
ESD audit and measuring report and Qualifier sheet

Measurement results	Register number:	EMJL20170912_1ESD_Dr.Schutz	Review date:	2017.09.12.

Type of ESD floor for tests			Required measurement results			Comparison of measured results									
Sample number	Floor type	Measured points	Measurement types	Limits		Mesurement 1			Measurement 2			Measurement 3			Notes
						Date:	2017.09.12.		Date:	2017.--.--.		Date:	2017.--.--.		
				Low	High	Measured value	Unit	Compliance	Measured value	Unit	Compliance	Measured value	Unit	Compliance	
Sample 2017_03	Material: **STO POX KU 613** (original flooring) **Dr. Schutz material layout: ESD Color Base 2 coats ESD TopCoat 1 coat** 	between points 1 and 2	R_{p-p}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	1.73	MΩ	OK	-	-	-	-	-	-	Original floor
		between points 3 and 4	R_{p-p}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	275	kΩ	OK	-	-	-	-	-	-	Coated floor
		between points 5 and 6	R_{p-p}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	660	kΩ	OK	-	-	-	-	-	-	
		between points 9 and 7	R_{p-p}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	674	kΩ	OK	-	-	-	-	-	-	Relation between the original and the coated floor surface
		between point 9 and grounding	R_{gp}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	443	kΩ	OK	-	-	-	-	-	-	Original floor
		between point 7 and grounding	R_{gp}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	32.1	kΩ	OK	-	-	-	-	-	-	Coated floor
		between point 9 and grounding (copper earth electrode)	R_{gp}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	38.5	MΩ	OK	-	-	-	-	-	-	Original floor
		between point 7 and grounding (copper earth electrode)	R_{gp}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	3.3	MΩ	OK	-	-	-	-	-	-	Coated floor
		System measurement to original floor	$R_{sys.}$	-	$1.0\times10^9\ \Omega$	12.5	MΩ	OK	-	-	-	-	-	-	Original floor
		System measurement to coated floor	$R_{sys.}$	-	$1.0\times10^9\ \Omega$	8.43	MΩ	OK	-	-	-	-	-	-	Coated floor
Sample 2017_04	Material: **Tarkett TORO** (original flooring) **Dr. Schutz material layout: ESD Color Base 2 coats ESD TopCoat 1 coat** 	between points 1 and 2	R_{p-p}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	37.7	MΩ	OK	-	-	-	-	-	-	Original floor
		between points 3 and 4	R_{p-p}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	143	kΩ	OK	-	-	-	-	-	-	Coated floor
		between points 5 and 6	R_{p-p}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	162	kΩ	OK	-	-	-	-	-	-	
		between points 9 and 7	R_{p-p}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	19.5	MΩ	OK	-	-	-	-	-	-	Relation between the original and the coated floor surface
		between point 9 and grounding	R_{gp}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	14	MΩ	OK	-	-	-	-	-	-	Original floor
		between point 7 and grounding	R_{gp}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	100	kΩ	OK	-	-	-	-	-	-	Coated floor
		between point 9 and grounding (copper earth electrode)	R_{gp}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	132	MΩ	OK	-	-	-	-	-	-	Original floor
		between point 7 and grounding (copper earth electrode)	R_{gp}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	116	kΩ	OK	-	-	-	-	-	-	Coated floor
		System measurement to original floor	$R_{sys.}$	-	$1.0\times10^9\ \Omega$	66.8	MΩ	OK	-	-	-	-	-	-	Original floor
		System measurement to coated floor	$R_{sys.}$	-	$1.0\times10^9\ \Omega$	14.9	MΩ	OK	-	-	-	-	-	-	Coated floor

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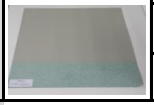
ESD audit and measuring report and Qualifier sheet

Measurement results	Register number:	EMJL20170912_1ESD_Dr.Schutz	Review date:	2017.09.12.

Type of ESD floor for tests			Required measurement results			Comparison of measured results									
Sample number	Floor type	Measured points	Measurement types	Limits		Mesurement 1			Measurement 2			Measurement 3			Notes
						Date:	2017.09.12.		Date:	2017.--.--.		Date:	2017.--.--.		
				Low	High	Measured value	Unit	Compliance	Measured value	Unit	Compliance	Measured value	Unit	Compliance	
Sample 2017_05	Material: **Graboplast ESD PVC** (original flooring) **Dr. Schutz material layout: ESD Color Base 2 coats ESD TopCoat 1 coat** 	between points 1 and 2	R_{p-p}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	10.5	MΩ	OK	-	-	-	-	-	-	Original floor
		between points 3 and 4	R_{p-p}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	384	kΩ	OK	-	-	-	-	-	-	Coated floor
		between points 5 and 6	R_{p-p}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	333	kΩ	OK	-	-	-	-	-	-	
		between points 9 and 7	R_{p-p}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	1.48	MΩ	OK	-	-	-	-	-	-	Relation between the original and the coated floor surface
		between point 9 and grounding	R_{gp}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	7.2	MΩ	OK	-	-	-	-	-	-	Original floor
		between point 7 and grounding	R_{gp}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	6.19	MΩ	OK	-	-	-	-	-	-	Coated floor
		between point 9 and grounding (copper earth electrode)	R_{gp}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	11.3	MΩ	OK	-	-	-	-	-	-	Original floor
		between point 7 and grounding (copper earth electrode)	R_{gp}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	6.66	MΩ	OK	-	-	-	-	-	-	Coated floor
		System measurement to original floor	$R_{sys.}$	-	$1.0\times10^9\ \Omega$	66.7	MΩ	OK	-	-	-	-	-	-	Original floor
		System measurement to coated floor	$R_{sys.}$	-	$1.0\times10^9\ \Omega$	45.7	MΩ	OK	-	-	-	-	-	-	Coated floor
Sample 2017_06	Material: **STO POX KU 615** (original flooring) **Dr. Schutz material layout: ESD BaseCoat 2 rcoats ESD TopCoat 1 coat**	between points 1 and 2	R_{p-p}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	94.8	kΩ	OK	-	-	-	-	-	-	Original floor
		between points 3 and 4	R_{p-p}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	189	kΩ	OK	-	-	-	-	-	-	Coated floor
		between points 5 and 6	R_{p-p}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	143	kΩ	OK	-	-	-	-	-	-	
		between points 9 and 7	R_{p-p}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	169	kΩ	OK	-	-	-	-	-	-	Relation between the original and the coated floor surface
		between point 9 and grounding	R_{gp}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	31.2	kΩ	OK	-	-	-	-	-	-	Original floor
		between point 7 and grounding	R_{gp}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	145	kΩ	OK	-	-	-	-	-	-	Coated floor
		between point 9 and grounding (copper earth electrode)	R_{gp}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	68.2	GΩ	NOK	-	-	-	-	-	-	Original floor
		between point 7 and grounding (copper earth electrode)	R_{gp}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	5.41	MΩ	OK	-	-	-	-	-	-	Coated floor
		System measurement to original floor	$R_{sys.}$	-	$1.0\times10^9\ \Omega$	17.4	MΩ	OK	-	-	-	-	-	-	Original floor
		System measurement to coated floor	$R_{sys.}$	-	$1.0\times10^9\ \Omega$	6.54	MΩ	OK	-	-	-	-	-	-	Coated floor

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ESD audit and measuring report and Qualifier sheet

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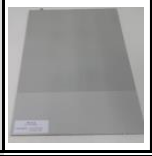
Measurement results	Register number:	EMJL20170912_1ESD_Dr.Schutz	Review date:	2017.09.12.

Type of ESD floor for tests			Required measurement results			Comparison of measured results									Notes
Sample number	Floor type	Measured points	Measurement types	Limits		Mesurement 1			Measurement 2			Measurement 3			
						Date:	2017.09.12.		Date:	2017.--.--.		Date:	2017.--.--.		
				Low	High	Measured value	Unit	Compliance	Measured value	Unit	Compliance	Measured value	Unit	Compliance	
Sample 2017_07	Material: **STO POX KU 611** (original flooring) **Dr. Schutz material layout: ESD BaseCoat 2 coats ESD TopCoat 1 coat**	between points 1 and 2	R_{p-p}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	170	kΩ	OK	-	-	-	-	-	-	Original floor
		between points 3 and 4	R_{p-p}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	190	kΩ	OK	-	-	-	-	-	-	Coated floor
		between points 5 and 6	R_{p-p}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	120	kΩ	OK	-	-	-	-	-	-	
		between points 9 and 7	R_{p-p}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	100	kΩ	OK	-	-	-	-	-	-	Relation between the original and the coated floor surface
		between point 9 and grounding	R_{gp}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	25	kΩ	OK	-	-	-	-	-	-	Original floor
		between point 7 and grounding	R_{gp}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	52.2	kΩ	OK	-	-	-	-	-	-	Coated floor
		between point 9 and grounding (copper earth electrode)	R_{gp}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	100	GΩ	NOK	-	-	-	-	-	-	Original floor
		between point 7 and grounding (copper earth electrode)	R_{gp}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	505	kΩ	OK	-	-	-	-	-	-	Coated floor
		System measurement to original floor	$R_{sys.}$	-	$1.0\times10^9\ \Omega$	312	MΩ	OK	-	-	-	-	-	-	Original floor
		System measurement to coated floor	$R_{sys.}$	-	$1.0\times10^9\ \Omega$	6.74	MΩ	OK	-	-	-	-	-	-	Coated floor
Sample 2017_08	Material: **STO POX 613** (original flooring) **Dr. Schutz material layout: ESD BaseCoat 2 coats ESD TopCoat 1 coat** 	between points 1 and 2	R_{p-p}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	1.61	MΩ	OK	-	-	-	-	-	-	Original floor
		between points 3 and 4	R_{p-p}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	167	kΩ	OK	-	-	-	-	-	-	Coated floor
		between points 5 and 6	R_{p-p}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	264	kΩ	OK	-	-	-	-	-	-	
		between points 9 and 7	R_{p-p}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	975	kΩ	OK	-	-	-	-	-	-	Relation between the original and the coated floor surface
		between point 9 and grounding	R_{gp}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	946	kΩ	OK	-	-	-	-	-	-	Original floor
		between point 7 and grounding	R_{gp}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	132	kΩ	OK	-	-	-	-	-	-	Coated floor
		between point 9 and grounding (copper earth electrode)	R_{gp}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	1.19	MΩ	OK	-	-	-	-	-	-	Original floor
		between point 7 and grounding (copper earth electrode)	R_{gp}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	3.38	MΩ	OK	-	-	-	-	-	-	Coated floor
		System measurement to original floor	$R_{sys.}$	-	$1.0\times10^9\ \Omega$	11.5	MΩ	OK	-	-	-	-	-	-	Original floor
		System measurement to coated floor	$R_{sys.}$	-	$1.0\times10^9\ \Omega$	7.12	MΩ	OK	-	-	-	-	-	-	Coated floor

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ESD audit and measuring report and Qualifier sheet

Measurement results	Register number:	EMJL20170912_1ESD_Dr.Schutz	Review date:	2017.09.12.

Type of ESD floor for tests			Required measurement results			Comparison of measured results									
Sample number	Floor type	Measured points	Measurement types	Limits		Mesurement 1			Measurement 2			Measurement 3			Notes
						Date:	2017.09.12.		Date:	2017.--.--.		Date:	2017.--.--.		
				Low	High	Measured value	Unit	Compliance	Measured value	Unit	Compliance	Measured value	Unit	Compliance	
Sample 2017_09	Material: **Tarkett TORO** (original flooring) **Dr. Schutz material layout: ESD BaseCoat 2 coats ESD TopCoat 1 coat**	between points 1 and 2	R_{p-p}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	139	MΩ	OK	-	-	-	-	-	-	Original floor
		between points 3 and 4	R_{p-p}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	538	kΩ	OK	-	-	-	-	-	-	Coated floor
		between points 5 and 6	R_{p-p}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	486	MΩ	OK	-	-	-	-	-	-	
		between points 9 and 7	R_{p-p}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	84.4	MΩ	OK	-	-	-	-	-	-	Relation between the original and the coated floor surface
		between point 9 and grounding	R_{gp}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	75	MΩ	OK	-	-	-	-	-	-	Original floor
		between point 7 and grounding	R_{gp}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	268	kΩ	OK	-	-	-	-	-	-	Coated floor
		between point 9 and grounding (copper earth electrode)	R_{gp}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	417	MΩ	OK	-	-	-	-	-	-	Original floor
		between point 7 and grounding (copper earth electrode)	R_{gp}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	496	kΩ	OK	-	-	-	-	-	-	Coated floor
		System measurement to original floor	$R_{sys.}$	-	$1.0\times10^9\ \Omega$	40.4	MΩ	OK	-	-	-	-	-	-	Original floor
		System measurement to coated floor	$R_{sys.}$	-	$1.0\times10^9\ \Omega$	21.7	MΩ	OK	-	-	-	-	-	-	Coated floor
Sample 2017_10	Material: **STO POX KU 615** (original flooring) **Dr. Schutz material layout: ESD BaseCoat 1 coat ESD TopCoat 1 coat**	between points 1 and 2	R_{p-p}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	169	MΩ	OK	-	-	-	-	-	-	Original floor
		between points 3 and 4	R_{p-p}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	688	kΩ	OK	-	-	-	-	-	-	Coated floor
		between points 5 and 6	R_{p-p}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	1.22	MΩ	OK	-	-	-	-	-	-	
		between points 9 and 7	R_{p-p}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	1.18	MΩ	OK	-	-	-	-	-	-	Relation between the original and the coated floor surface
		between point 9 and grounding	R_{gp}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	39.2	kΩ	OK	-	-	-	-	-	-	Original floor
		between point 7 and grounding	R_{gp}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	823	kΩ	OK	-	-	-	-	-	-	Coated floor
		between point 9 and grounding (copper earth electrode)	R_{gp}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	100	GΩ	NOK	-	-	-	-	-	-	Original floor
		between point 7 and grounding (copper earth electrode)	R_{gp}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	2.44	MΩ	OK	-	-	-	-	-	-	Coated floor
		System measurement to original floor	$R_{sys.}$	-	$1.0\times10^9\ \Omega$	23.7	MΩ	OK	-	-	-	-	-	-	Original floor
		System measurement to coated floor	$R_{sys.}$	-	$1.0\times10^9\ \Omega$	7.6	MΩ	OK	-	-	-	-	-	-	Coated floor

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ESD audit and measuring report and Qualifier sheet

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Measurement results	Register number:	EMJL20170912_1ESD_Dr.Schutz	Review date:	2017.09.12.

Type of ESD floor for tests			Required measurement results			Comparison of measured results									Notes
Sample number	Floor type	Measured points	Measurement types	Limits		Mesurement 1			Measurement 2			Measurement 3			
						Date:	2017.09.12.		Date:	2017.--.--.		Date:	2017.--.--.		
				Low	High	Measured value	Unit	Compliance	Measured value	Unit	Compliance	Measured value	Unit	Compliance	
Sample 2017_11	Material: **STO POX KU 611** (original flooring) **Dr. Schutz material layout: ESD BaseCoat 1 coat ESD TopCoat 1 coat**	between points 1 and 2	R_{p-p}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	150	kΩ	OK	-	-	-	-	-	-	Original floor
		between points 3 and 4	R_{p-p}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	2.12	MΩ	OK	-	-	-	-	-	-	Coated floor
		between points 5 and 6	R_{p-p}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	762	kΩ	OK	-	-	-	-	-	-	
		between points 9 and 7	R_{p-p}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	150	kΩ	OK	-	-	-	-	-	-	Relation between the original and the coated floor surface
		between point 9 and grounding	R_{gp}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	55.4	kΩ	OK	-	-	-	-	-	-	Original floor
		between point 7 and grounding	R_{gp}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	104	kΩ	OK	-	-	-	-	-	-	Coated floor
		between point 9 and grounding (copper earth electrode)	R_{gp}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	100	GΩ	NOK	-	-	-	-	-	-	Original floor
		between point 7 and grounding (copper earth electrode)	R_{gp}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	4.36	MΩ	OK	-	-	-	-	-	-	Coated floor
		System measurement to original floor	$R_{sys.}$	-	$1.0\times10^9\ \Omega$	1.72	GΩ	NOK	-	-	-	-	-	-	Original floor
		System measurement to coated floor	$R_{sys.}$	-	$1.0\times10^9\ \Omega$	9.7	MΩ	OK	-	-	-	-	-	-	Coated floor
Sample 2017_12	Material: **STO POX KU 613** (original flooring) **Dr. Schutz material layout: ESD BaseCoat 1 coat ESD TopCoat 1 coat**	between points 1 and 2	R_{p-p}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	1.1	MΩ	OK	-	-	-	-	-	-	Original floor
		between points 3 and 4	R_{p-p}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	398	kΩ	OK	-	-	-	-	-	-	Coated floor
		between points 5 and 6	R_{p-p}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	498	kΩ	OK	-	-	-	-	-	-	
		between points 9 and 7	R_{p-p}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	232	kΩ	OK	-	-	-	-	-	-	Relation between the original and the coated floor surface
		between point 9 and grounding	R_{gp}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	67.5	kΩ	OK	-	-	-	-	-	-	Original floor
		between point 7 and grounding	R_{gp}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	114	kΩ	OK	-	-	-	-	-	-	Coated floor
		between point 9 and grounding (copper earth electrode)	R_{gp}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	6.99	MΩ	OK	-	-	-	-	-	-	Original floor
		between point 7 and grounding (copper earth electrode)	R_{gp}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	573	kΩ	OK	-	-	-	-	-	-	Coated floor
		System measurement to original floor	$R_{sys.}$	-	$1.0\times10^9\ \Omega$	10.3	MΩ	OK	-	-	-	-	-	-	Original floor
		System measurement to coated floor	$R_{sys.}$	-	$1.0\times10^9\ \Omega$	8.04	MΩ	OK	-	-	-	-	-	-	Coated floor

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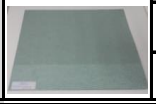
ESD audit and measuring report and Qualifier sheet

Measurement results	Register number:	EMJL20170912_1ESD_Dr.Schutz	Review date:	2017.09.12.

Type of ESD floor for tests			Required measurement results			Comparison of measured results									
Sample number	Floor type	Measured points	Measurement types	Limits		Mesurement 1			Measurement 2			Measurement 3			Notes
						Date:	2017.09.12.		Date:	2017.--.--.		Date:	2017.--.--.		
				Low	High	Measured value	Unit	Compliance	Measured value	Unit	Compliance	Measured value	Unit	Compliance	
Sample 2017_13	Material: **Tarkett TORO** (original flooring) **Dr. Schutz material layout: ESD BaseCoat 1 coat ESD TopCoat 1 coat**	between points 1 and 2	R_{p-p}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	68	MΩ	OK	-	-	-	-	-	-	Original floor
		between points 3 and 4	R_{p-p}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	881	kΩ	OK	-	-	-	-	-	-	Coated floor
		between points 5 and 6	R_{p-p}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	764	kΩ	OK	-	-	-	-	-	-	
		between points 9 and 7	R_{p-p}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	1.38	MΩ	OK	-	-	-	-	-	-	Relation between the original and the coated floor surface
		between point 9 and grounding	R_{gp}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	1.51	MΩ	OK	-	-	-	-	-	-	Original floor
		between point 7 and grounding	R_{gp}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	372	kΩ	OK	-	-	-	-	-	-	Coated floor
		between point 9 and grounding (copper earth electrode)	R_{gp}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	135	MΩ	OK	-	-	-	-	-	-	Original floor
		between point 7 and grounding (copper earth electrode)	R_{gp}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	1.51	MΩ	OK	-	-	-	-	-	-	Coated floor
		System measurement to original floor	$R_{sys.}$	-	$1.0\times10^9\ \Omega$	47.7	MΩ	OK	-	-	-	-	-	-	Original floor
		System measurement to coated floor	$R_{sys.}$	-	$1.0\times10^9\ \Omega$	18.5	MΩ	OK	-	-	-	-	-	-	Coated floor
Sample 2017_14	Material: **Graboplast ESD PVC** (original flooring) **Dr. Schutz material layout: ESD BaseCoat 1 coat ESD TopCoat 1 coat** 	between points 1 and 2	R_{p-p}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	90.5	MΩ	OK	-	-	-	-	-	-	Original floor
		between points 3 and 4	R_{p-p}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	6.56	MΩ	OK	-	-	-	-	-	-	Coated floor
		between points 5 and 6	R_{p-p}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	4.33	MΩ	OK	-	-	-	-	-	-	
		between points 9 and 7	R_{p-p}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	31.1	MΩ	OK	-	-	-	-	-	-	Relation between the original and the coated floor surface
		between point 9 and grounding	R_{gp}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	70.1	MΩ	OK	-	-	-	-	-	-	Original floor
		between point 7 and grounding	R_{gp}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	20.6	MΩ	OK	-	-	-	-	-	-	Coated floor
		between point 9 and grounding (copper earth electrode)	R_{gp}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	72.3	MΩ	OK	-	-	-	-	-	-	Original floor
		between point 7 and grounding (copper earth electrode)	R_{gp}	$1.0\times10^4\ \Omega$	$1.0\times10^9\ \Omega$	50.9	MΩ	OK	-	-	-	-	-	-	Coated floor
		System measurement to original floor	$R_{sys.}$	-	$1.0\times10^9\ \Omega$	88.3	MΩ	OK	-	-	-	-	-	-	Original floor
		System measurement to coated floor	$R_{sys.}$	-	$1.0\times10^9\ \Omega$	76	MΩ	OK	-	-	-	-	-	-	Coated floor

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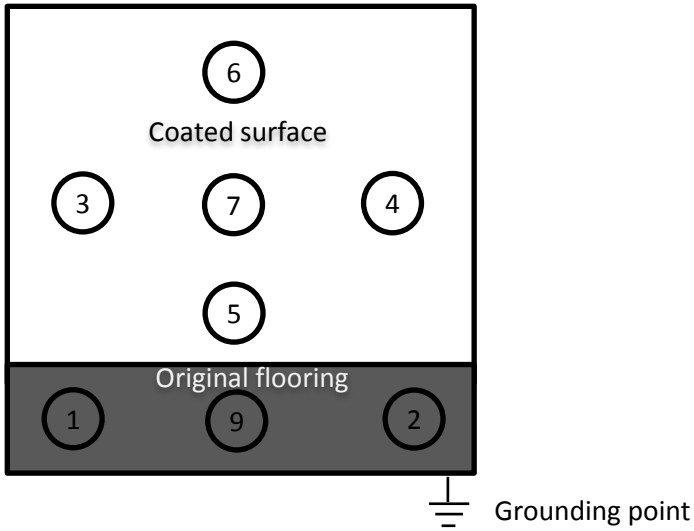
Measurement results	Register number:	EMJL20170912_1ESD_Dr.Schutz	Review date:	2017.09.12.

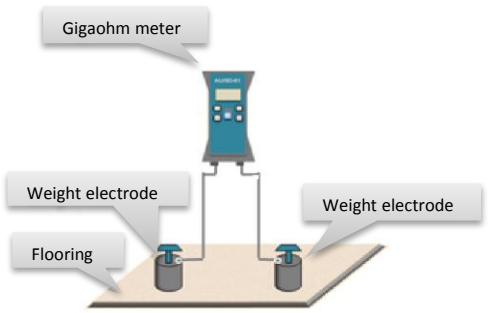
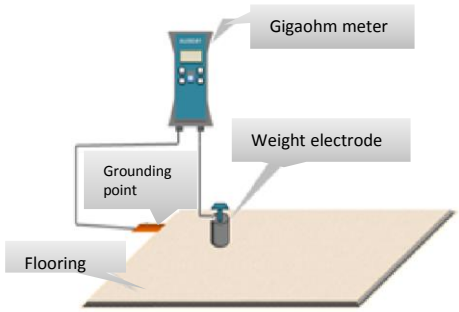
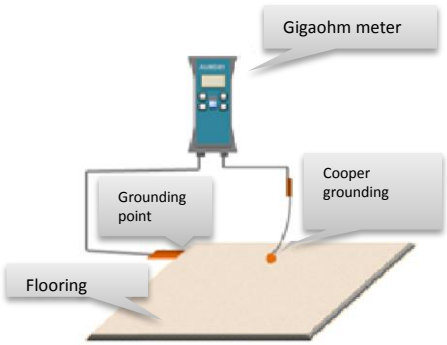
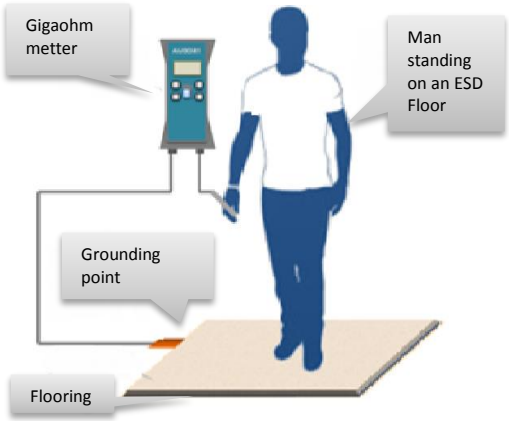
Type of ESD floor for tests			Required measurement results			Comparison of measured results									Notes
Sample number	Floor type	Measured points	Measurement types	Limits		Mesurement 1			Measurement 2			Measurement 3			
						Date:	2017.09.12.		Date:	2017.--.--.		Date:	2017.--.--.		
				Low	High	Measured value	Unit	Compliance	Measured value	Unit	Compliance	Measured value	Unit	Compliance	

Measurement points



II. Annex: Schematic diagram of the measurements

Serial number:	EMJL20170912_1ESD_Dr.Schutz	Date of issue	2017.09.12.

Sample indentification			Requested measurement results			The schematic diagram or photo of the measurements
Sample number	Sample type	Notes	Measurement types	Measurement limit		
				Low:	High:	
-	Flooring samples coated with Dr Schutz materials	Measurement points: see annex I	R_{p-p}	-	$1.0\times10^9\ \Omega$	
-		Measurement points: see annex I	R_{gp}	-	$1.0\times10^9\ \Omega$	
-		Measurement points: see annex I	R_{gp}	-	$1.0\times10^9\ \Omega$	
-		Measurement points: see annex I	$R_{sys.}$	-	$1.0\times10^9\ \Omega$