

Scandinavian Business Seating AB
Roy Bakken
Vallgatan 1
Box 294
SE-571 23 Nässjö

Test of chairs regarding ESD protective properties

1 Client

Scandinavian Business Seating AB

2 Test objects

Three chairs manufactured by Scandinavian Business Seating AB with the following type designations:

Activ 220 ESD

Order no.5110019725-3

Seat: Medium

Back rest: Large

Dressing of seat and backrest: Vinyl (black)

Gas spring: B

Base: 5F

Wheels: 7FM



Activ 220 ESD

Order no.5110019725-2

Seat: Medium

Back rest: Large

Dressing of seat and backrest: GAJA (black)

Gas spring: B

Base: 5F

Wheels: 7FM



Activ 200 ESD

Order no.5110019725-1

Seat: Medium

Back rest: Medium

Dressing of seat and backrest: GLOBAL (Blue)

Gas spring: B

Base: 5F

Wheels: 7HF



The chairs arrived at SP 2014-05-02

3 Commission

Tests for ESD-approval according to IEC 61340.

4 Performance and result

The measurements were performed by Sven Byheden 2014-05-05 according to IEC 61340-5-1, edition 1.0, 2007 and IEC 61340-2-3, first edition (SP-method 2472, issue 6 with appendix 6, issue 5).

The test objects were conditioned during more than 48 h in $23\text{ }^{\circ}\text{C} \pm 2\text{ }^{\circ}\text{C}$ and $12\text{ \% RH} \pm 3\text{ \% RH}$. The measurements were performed in the same climate.

Instrument: SP inv. No. 501419; instrument uncertainty less than $\pm 1\%$.

SP inv. No. 502920; instrument uncertainty less than $\pm 3\text{ V}$.

4.1 Resistance to ground

Resistance values were measured at 10 V and 100 VDC from seats and back rests to one wheel at the time.

All wheels on all chairs were measured.

Result Activ 220 ESD wit order no.5110019725-3

All measured resistance values were less than $8.3 \times 10^5 \Omega$.

Requirement of resistance to ground less than $10^{10} \Omega$ to at least two wheels was fulfilled.

Result Activ 220 ESD wit order no.5110019725-2

Three wheels had resistance values less than $2.0 \times 10^6 \Omega$.

Two wheels had resistance values higher than $10^{10} \Omega$.

Requirement of resistance to ground less than $10^{10} \Omega$ to at least two wheels was fulfilled.

Result Activ 200 ESD wit order no.5110019725-1

All measured resistance values were less than $1.1 \times 10^6 \Omega$.

Requirement of resistance to ground less than $10^{10} \Omega$ to at least two wheels was fulfilled.

4.2 Measurements according to SP-Method 2472, issue 6, section 7.3.

4.2.1 Resistance to ground

Resistance was measured from all parts of the chairs to ground at 100 VDC.

All chairs were measured.

Result

The following parts had a resistance to ground higher than $10^9 \Omega$.

Adjustment knobs made of black plastic underneath the seat.

4.2.2 Electrostatic potentials

Electrostatic potentials on parts positioned higher than 50 cm from the floor

Parts having a resistance to ground higher than $10^9 \Omega$ were measured regarding electrostatic potentials. The potentials were measured 2 s after a slight touch with the hand or cloth. The measurements were performed with a metal plate (\varnothing 20 mm, 2 pF) simulating a small sensitive device (instrument SP inv. No. 501781; instrument uncertainty $< \pm 1\%$).

Result

No parts positioned higher than 50 cm from the floor had a resistance to ground higher than $10^9 \Omega$

Electrostatic potentials on parts positioned less than 50 cm from the floor.

Electrostatic potentials were measured at a distance 50 cm from the floor. The potentials were measured 2 s after a slight touch with the hand or cloth. The measurements were performed with a metal plate (\varnothing 20 mm, 2 pF) simulating a small sensitive device (instrument SP inv. No. 501781; instrument uncertainty $< \pm 1\%$).

Result

No electrostatic potentials higher than 25 V were measured.

4.2.3 Summary of measurements of resistance and electrostatic potentials

Result

The requirement that a product in an EPA must not accumulate and keep an electrostatic voltage higher than 100 V for longer than a maximum of 2 s was fulfilled.

4.3 Marking

The chairs were marked with ESD-symbol, manufacturers name and type designation.

5 Summary

The chairs fulfilled the requirements according to IEC 61340-5-1, edition 1.0, 2007.

The test result applies to the tested objects only.

SP Technical Research Institute of Sweden Electronics - Product Safety

Performed by

Examined by

Ingvar Karlson

Anders Nilsson