REPORT

Contact person
Sven Byheden
Electrification and Reliability
+46 10 516 56 83
sven.byheden@ri.se

Date
2023-02-28

Reference
O1176285

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Safety First AB
Christian Nilsson
Järnringen 19
433 30 PARTILLE

Test of standing mats regarding electrostatic protective properties
(1 appendix)

Test object

Standing mat with type designation “Senso Dial ESD”.

Senso Dial ESD

RISE Research Institutes of Sweden AB
Product Safety - Electrical & Electronic products

Performed by

Sven Byheden

Examined by

Charlotte Uddh

RISE Research Institutes of Sweden AB

Postal address
Box 857
501 15 BORÅS
SWEDEN

Office location
Brinellgatan 4
504 62 Borås
SWEDEN

Phone / Fax / E-mail
+46 10-516 50 00
+46 33-13 55 02
info@ri.se

Summary

Standing mat Senso Dial ESD fulfilled the requirements for ESD-approval according to IEC 61340-5-1, ed 2, 2016.

1 Commission

Tests according to IEC 61340-4-1 for ESD-approval.

2 Client

Safety First AB, Partille, Sweden

3 Test objects

Standing mats with top sides made of black rubber and underneath (except for 75 mm at the edges) covered with black plastic foam.

Supplier: Safety First AB

Type designation: Senso Dial ESD

Grounding is achieved either through direct grounding via ESD-flooring or via a 1 MΩ ground cable connected to the mat.

Three mats (1400 x 1000 mm) with ground cables arrived at SP 2023-02-21.

4 Performance and result

The measurements were performed according IEC 61340-5-1:2016 and IEC 61340-4-1:2015 (SP-method 2472, issue 10 with appendix 3, issue 9).

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

Testing was carried out by Sven Byheden 2023-02-23.

The test results apply to the tested items only.

Two different measurements were performed at max 100 V d.c.

Resistance to ground was measured from a stainless steel cylinder electrode (Ø 65 mm; 2.5 kg), placed in six different positions on each mat, to the ground connection point (via a 1 Mohm ground connection cable). The mats were placed on an insulating support during the measurements.

Resistance to ground was also measured from a stainless steel cylinder electrode (Ø 65 mm; 2.5 kg), placed in six different positions on each mat, to a metal plate placed underneath the mat.

Conductive rubber was used as contact material between the electrode and the mats.
Instrument: SP inv. No. 502589 (instrument uncertainty less than ± 1 %).

4.1 Measurement to the ground connection point

Result

Minimum value: 2.0 x 10^6 Ω
Maximum value: 4.4 x 10^7 Ω
Geometric mean value: 3.1 x 10^6 Ω

The requirement of resistance to ground less than 10^9 Ω was fulfilled.

4.2 Measurement to a metal plate underneath the mats

Result

Minimum value: 2.9 x 10^4 Ω
Maximum value: 3.7 x 10^5 Ω
Geometric mean value: 1.2 x 10^5 Ω

The requirement of resistance to ground less than 10^9 Ω was fulfilled.

4.3 Electrostatic potentials

No tests were performed. All exposed parts had a resistance to ground less than 10^9 Ω.

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.

4.4 Marking

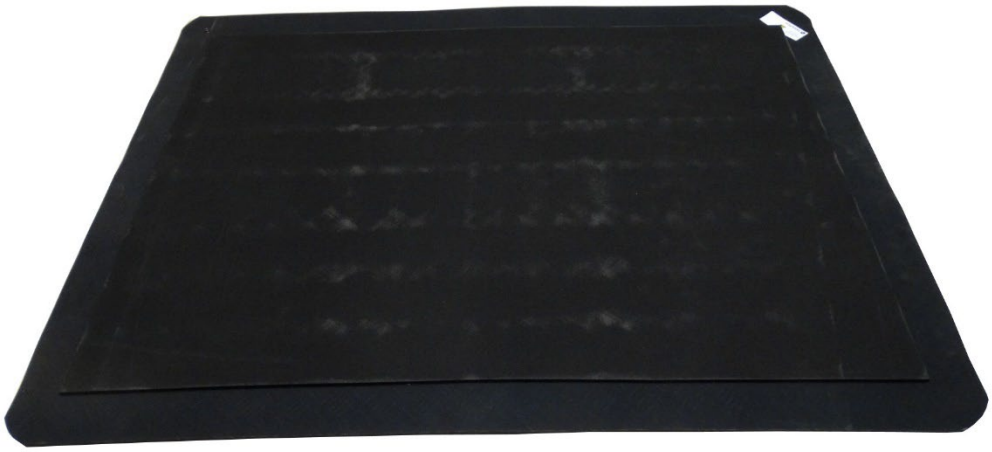
The mats were marked with manufacturer's name, type designation and ESD-symbol.

Appendix

Appendix 1: Photographs

Appendix 1

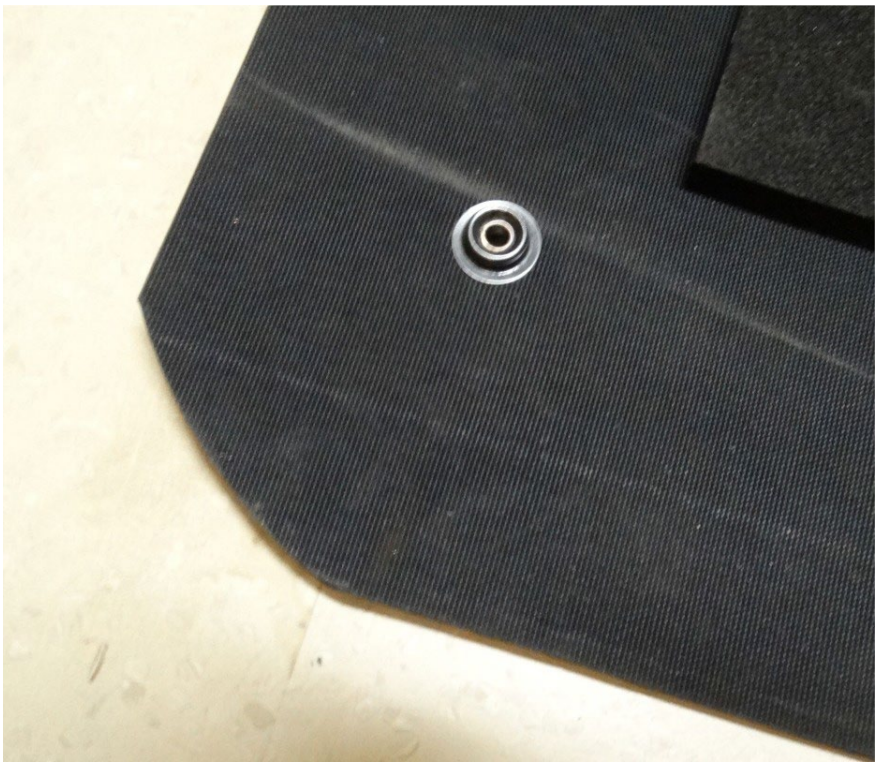
Senso Dial ESD



Senso Dial ESD

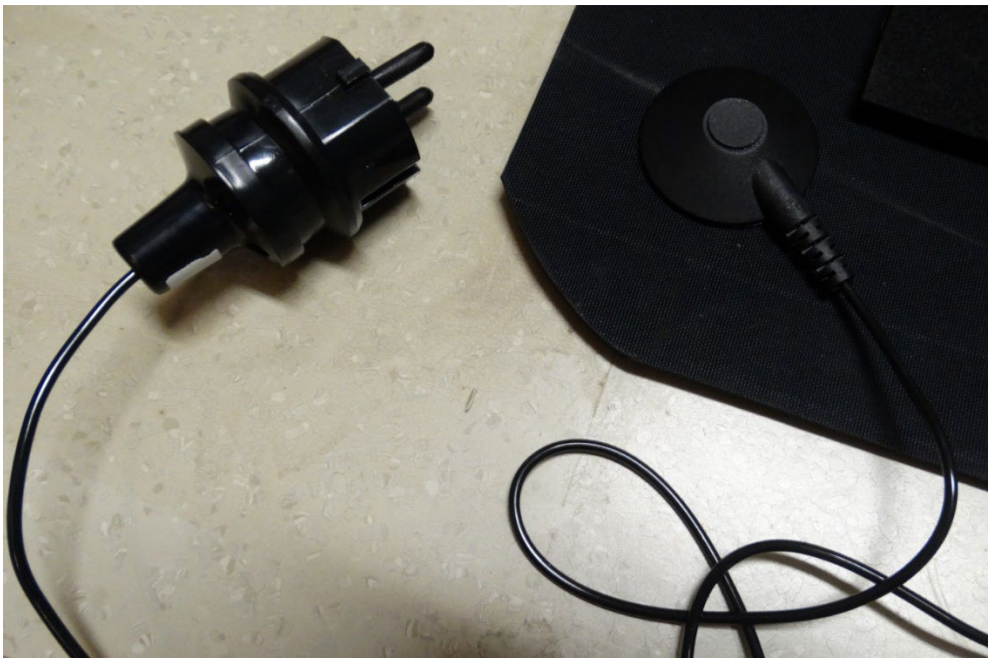
Appendix 1

Marking



Ground connection point

Appendix 1



Ground connection cable

Verifikat

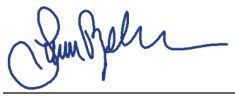
Transaktion 09222115557488027652

Dokument

O1176285
Huvuddokument
6 sidor
Startades 2023-02-28 13:00:14 CET (+0100) av Sven Byheden (SB)
Färdigställt 2023-03-01 09:02:59 CET (+0100)

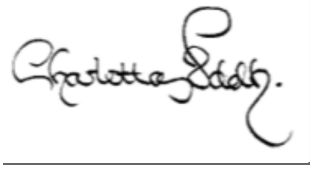
Signerande parter

Sven Byheden (SB)
RISE Research Institutes of Sweden AB
Org. nr 556464-6874
sven.byheden@ri.se



Signerade 2023-02-28 13:06:58 CET (+0100)

Charlotta Uddh (CU)
RISE Research Institute of Sweden AB
charlotta.uddh@ri.se



Signerade 2023-03-01 09:02:59 CET (+0100)