REPORT

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Date 2015-08-20 Reference 5F005679 D

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System resistance measurements and walking tests

Test objects

Vinyl floor covering type iQ Toro SC.
Arbesko shoe model 855.

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Electronics - Product Safety

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1 Commission

System resistance measurement and walking test according to IEC 61340-4-5.

2 Client

Tarkett AB, Ronneby, Sweden

3 Test objects

Vinyl floor covering manufactured by Tarkett.
Type designation: iQ Toro SC.
Product description according to the manufacturer:
Thickness: 2.0 mm
Weight: 2950 g/m^2
Density: 1500 kg/m^3

One pair of shoes provided by the client:
Arbesko, model 855 size 42.

Floor sample (size 2000 x 1000 mm) and shoes arrived at SP 2015-06-26. The floor sample was provided with a grounding stripe and was glued on to wooden board.

4 Performance and result

The measurements were performed according to IEC 61340-4-5, first edition, 2004.

The test objects were conditioned during 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 2015-08-18.

The test results apply to the tested items only.

4.1 Resistance to ground measurement, system of footwear and flooring

A test person was wearing the test footwear and holding a hand electrode made of stainless steel (Ø 25 mm; length 75 mm). The measurements were performed with Keithley 487 at 100 V d.c. between the hand electrode and the grounding stripe of the tested floor.

Five different test points of the floor were measured.

At each test point three measurements were performed.
- The test person was standing on the left foot with the right foot lifted about 150 mm.
- The test person was standing on the right foot with the left foot lifted about 150 mm.
- The test person was standing on both feet.

The resistance values were registered 15 s after initiation of voltage.
Instrument: SP inv. No. 501419 (instrument uncertainty less than 1 %).

Result, iQ Toro SC and Arbesko

Contact to floor	min	max	mean
Left foot	1.5 x 10^7 Ω	2.1 x 10^7 Ω	1.8x 10^7 Ω
Right foot	2.4 x 10^7 Ω	3.1 x 10^7 Ω	2.8 x 10^7 Ω
Both feet	1.3 x 10^7 Ω	1.6 x 10^7 Ω	1.4 x 10^7 Ω

4.2 Walking test

A test person was wearing the test footwear and holding a hand electrode made of stainless steel (Ø 25 mm; length 75 mm). The person walked forward and backward over the tested floor maintaining the body facing the same direction. As much as possible of the tested floor was covered during the 60 s walk.

Step rate: 2 steps/s
Lifting of footwear during the walk: 50-80 mm.

The potentials of the person were measured with a CPA (Charge Plate Analyzer) and were monitored on an oscilloscope.

Instruments: SP inv. Nos. 503608 and 503155 (Instrument uncertainty less than ±2 %).

Three walks were performed.
The five highest peaks from each walk was recorded.
The mean value of the five highest peaks from each walk was calculated.

Result, iQ Toro SC and Arbesko

	Walk 1	Walk 2	Walk 3
Peak 1	17 V	17 V	16 V
Peak 2	17 V	16 V	16 V
Peak 3	16 V	16 V	16 V
Peak 4	15 V	16 V	16 V
Peak 5	15 V	15 V	16 V

Mean value of all three walks: 16 V