

TEST REPORT No. E-0222-TT-16

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Laboratory Technical Textiles

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Test laboratory accredited by Deutsche Akkreditierungsstelle GmbH (DAkkS) against DIN EN ISO/IEC 17025. The accreditation is valid for the testing procedures listed in the DAP-certificate (in the test report signed with *).



Member of **eurolab**-Deutschland
Chemische Analytik; Mess- und Prüftechnik e.V..

Customer:

KE Fibertec AS
Industrivej Vest 21
6600 Vejen
Denmark

Order data:

Order date: 16.08.2016
Samples received: 22.08.2016
Testing date: 25.08.2016
Your reference: ----

Task:

Determination of electrostatic behaviour of a fabric.

Received Sample(s):

Sample name

A

Sample description

Antistatic HDC / KE-035020 (GreenWeave Antistatic / GWA 200)
Woven fabric, light grey

Test Procedure and Results

1 Applied test methods/normative references

- 1.1 Determination of surface resistance (DIN EN 1149-1; DIN 54345-1)*
- 1.2 Determination of electrical resistance of stripes (DIN 54345-5)*

2 Sampling and tests carried out

The selection of the sample was made by the customer.

The new material was tested, without pretreatment.

2.1 Determination of surface resistance

For the determination of electrical resistance two electrodes are used. The set-up of the electrodes is described in the standard to be used. The specimen is placed or fixed between the two electrodes and voltage is applied. The resistance is measured after 15 ± 1 seconds.

For the measurement of surface resistance the ring electrode according to DIN EN 1149-1 and DIN 54345-1 is used.

Test conditions:

Ohm meter:	Tera Ohmmeter 6206, Firma Eltex
Voltage:	10 V
Climatic conditions:	23 ± 1 °C / 50 ± 5 % relative humidity
Number of specimens:	5

The measurement was made on both sides of the material.

2.2 Determination of electrical resistance of stripes

According to DIN 54345-5 a stripe of the material with dimensions of 5 x 35 cm is fixed with a defined distance between 2 clamp electrodes. Voltage is applied and the resistance is measured after 15 ± 1 seconds. The distance is then reduced in defined steps and the resistance is measured again for each distance.

Test conditions:

Ohm meter:	Tera Ohmmeter 6206, Firma Eltex
Distance of electrodes:	300, 200, 100, 50, 30 and 10 mm
Voltage:	10 V
Climatic conditions:	23 ± 1 °C / 50 ± 5 % relative humidity
Number of specimens:	3 in warp- and weft direction

3 Test results

The material Antistatic HDC (GreenWeave Antistatic) shows on both material sides surface resistance values of less than $2 \cdot 10^3$ Ohm, if the ring electrode according to DIN 54345-1 or DIN EN 1149-1 is used.

Also the resistance of the stripes of the material Antistatic HDC (GreenWeave Antistatic) is less than $2 \cdot 10^3$ Ohm for all electrode distances.

4 Discussion of results

The surface resistance of the material Antistatic HDC (GreenWeave Antistatic) was measured using the ring electrode, standardised for textiles. In addition a resistance measurement was performed on stripes of the material, to measure the electric resistance over a distance of 300 mm. This method is used, if the electrostatic charge has to be discharged in the practical application over a longer distance.

The guideline TRGS 727 – January 2016 “Prevention of ignition danger because of electrostatic charges” requires materials with a surface resistance of less than 10^9 Ohm, measured under climatic conditions of 23 °C / 50% rel. humidity. According to TRGS 727 such materials are able to discharge electrostatic charges quick enough, if they are grounded or connected to the ground.

The surface resistance and the electrical resistance of stripes over a distance of 300 mm of the determined material Antistatic HDC (GreenWeave Antistatic) are less than $2 \cdot 10^3$ Ohm.

The material Antistatic HDC (GreenWeave Antistatic) is conductive according to the definition in TRGS 727.

For conductive materials it is necessary to make sure, that the materials are grounded in application.

Denkendorf, 2016-09-22

i. A. Dipl.-Ing. (FH) Matthias Schweins
(Laboratory Head)

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Note:

The test results relate to the above-specified samples, and may not be used as a basis for a lawsuit or advertisement without any written permission by the testing laboratory. The test report shall not be duplicated in parts without written permission of the testing laboratory. Evaluations of the obtained results and conclusions do not form part of the accreditation.

Retained samples will be discarded after 2 years, documents and data after 10 years without consultation, unless otherwise agreed.