



**EKOTEKS LABORATUVAR ve GÖZETİM
HİZMETLERİ A.Ş.**
Esenyurt Firuzköy Bulvarı No:29 34325 Avcılar
İstanbul/ TÜRKİYE

TEST REPORT
DENEY RAPORU

20014169-
ing-Add

05-20

EKOTEKS

Customer name: DOTEKS TEKSTİL GIDA SAN.TİC.LTD.ŞTİ.
Address: Mahmutbey Mah. İnönü Cad. No:157 Özyurt Plaza A1 Blok Kat:2 İstoç –
Bağcılar /İSTANBUL
Buyer name: -
Contact Person: ZELİHA AĞAOĞLU
Order No: -
Article No: OVERALLS
Name and identity of test item: White protective overalls (Claimed to be; NW POLY +PE FİLM)
The date of receipt of test item: 05.05.2020
Re-submitted/re-confirmation date: -
Date of test: 05.05.2020-13.05.2020
Remarks: -
Sampling: The results given in this report belong to the received sample by vendor.
End-Use: -
Care Label: Not Specified
Number of pages of the report: 6

Seal

Date
13.05.2020

Customer Representative
Hatice ACARALP

Head of Testing Laboratory
Sevim A. RAZAK

13.05.2020

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| REQUIRED TESTS | RESULT | COMMENTS |
|---|--------|----------|
| PHYSICAL PROPERTIES TESTS | | |
| Abrasion | - | Class 6 |
| Water Permeability | - | Class 6 |
| Tear Strength | - | Class 3 |
| Tensile Strength | - | Class 1 |
| Seam Strength ⁽¹⁾ | F | |
| MICROBIOLOGICAL TEST | | |
| Wet-Bacterial Penetration ⁽²⁾⁽³⁾ | P | |
| P: Pass F: Fail R: Refer to retailer technologist Tests were evaluated and classified according to BS EN 14325:2018 limit values. ⁽¹⁾ Tests were evaluated EN 13274-4:2001-Method 2 limit values ⁽²⁾ Test results will be given in a separate report. ⁽³⁾ Tests were evaluated BS EN 22610:2006 limit values | | |

REMARK: Original samples are kept for 3 months and all technical records are kept for 5 years unless otherwise specified. If requested, measurement uncertainty will be reported. But unless otherwise specified, measurement uncertainty is not considered while stating compliance with specification or limit values. The reported uncertainty is based on a standard uncertainty multiplied by a coverage factor k=2, providing a level of confidence of approximately 95 %. Tests marked (*) in this report are not included in the accreditation schedule.



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TEST RESULTS

Test Method : BS EN 14325:2018 (PRORECTIVE CLOTHING AGAINST CHEMICALS:TEST METHODS AND PERFORMANCE CLASSIFICATION OF CHEMICAL PROTECTIVE CLOTHING MATERIALS,SEAMS,JOINS AND ASSEMLAGES (*))

ABRASION RESISTANCE AND LEAK TIGHTNESS

Clause 4.4.Abrasion Resistance (EN ISO 12947-2) ANNEX-B

Martindale Test Machine (47.5±2 rpm) with Lissajous Figure.

9 kPa pressure,

Performed in the conditioned room (20±2°C-65%±4).

RESULT

No abrasion @ 450 revs

CLASS

4

Classified according to the
Table-1

Determination of the highest number of abrasion rubs which does not cause damage to the material and which shall be used for the performance classification.

The abrasion resistance of sample shall be Classified according to the levels of performance given in Table-1

Table-1 Classification of Abrasion Resistance

| Class | Number of rubs |
|--------------|-----------------------|
| 6 | >2000 |
| 5 | >1000 |
| 4 | >400 |
| 3 | >100 |
| 2 | >40 |
| 1 | >10 |

Clause 4.4.2.3 Hydrostatic head end –point determination (EN 20811)

If the average hydrostatic head exceeds 200mm,then the hydrostatic head method is applicable and the leak tightness shall be determined.

WATER PERMEABILITY ; EN ISO 811:2018

Hydrostatic Head Tester, Textest marka Fx 3000 model

Temperature of water10.°C. Pressure increase ratio 10 mbar/dk.

Performed in the conditioned room (20±2°C-65%±4)

Sample 1

RESULT

201.1 mm SS

Sample 2

200.9 mm SS

Sample 3

549.8 mm SS

Sample 4

200.5 mm SS

Average *

288.08 mm SS

* This average result for 4 Samples

REQUIREMENT

>200 mmSS

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TEST RESULT

TRAPEZOIDAL TEAR STRENGTH

Clause: 4.7.Trapezoidal Tear Resistance TS EN ISO 9073-4:2002(*)

Instron 5969 Speed:100±10 mm/min, Gauge length:5cm

The average results are given for width and length direction of five samples.

2 pre-tension applied

Performed in the conditioned room. (20±2°C - 65% ±4)

| | <u>RESULT</u> | <u>CLASS</u> |
|---------------|---------------|--|
| Width | 40.2 N | 3 |
| | | Classified according to the Table-4 |
| Length | 40.6 N | |

Table-4 Classification of Trapezoidal Tear Resistance

| Class | Tear Strength |
|--------------|----------------------|
| 6 | >150 N |
| 5 | >100 N |
| 4 | >60 N |
| 3 | >40 N |
| 2 | >20 N |
| 1 | >10 N |

TENSILE STRENGTH

Clause 4.9.Tensile Strength EN ISO 13934-1:2013

Instron 5969 (Load: 50 kN), Strip Method.

Speed: 100 mm/min±10, Gauge length 200 mm.

Pre-load was not applied. Without wetting samples.

The average results are given for width and length direction of five samples.

Performed in the conditioned room (20±2°C-65%±4).

| | <u>RESULT</u> | <u>CLASS</u> |
|---------------|---------------|--|
| Width | 55.2 N | 1 |
| | | Classified according to the Table-5 |
| Length | 76.6 N | |

Table-4 Classification of Tensile Strength

| Class | Tensile Strength |
|--------------|-------------------------|
| 6 | >1000 N |
| 5 | >500 N |
| 4 | >250 N |
| 3 | >100 N |
| 2 | >60 N |
| 1 | >30N |

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TEST RESULT
SEAM STRENGTH-GRAB METHOD

Clause 5.5 Seam Strength ISO 13935-2: 2014

Jaw Speed: 50±5 mm/min, Gauge Length: 100 mm±1 mm.

Seam Type : 301. 100 % Polyester core-spun sewing-thread was used.

5kN. load was applied.

The average results are given for width and length direction of five samples.

Performed in the conditioned room(20±2°C-65%±4)

| | <u>Seam Strength (N)</u> | <u>Fail</u> | <u>CLASS</u> |
|--------------------------|--------------------------|-------------|--|
| Crotch | 90.5 N | FTS | - Classified according to the Table-13 |
| Inner side seam | 47.4 N | FTS | |
| Front center seam | 41.2 N | FTS | |
| Back center seam | 27.2 N | FTS | |
| Waist | 69.8 N | FTS | |
| Hat | 83.5 N | FTS | |
| Sleeve | 23.8 N | FTS | |
| Zipper puller | 197.2 N | - | |

FTS : Fabric Tear At The Seam

FTJ : Fabric Tear At The Jaw

Table 13- Classification of Seam Strength

| CLASS | Seam strength |
|--------------|----------------------|
| 6 | >500 N |
| 5 | >300 N |
| 4 | >125 N |
| 3 | >75 N |
| 2 | >50 N |
| 1 | >30 N |

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TEST RESULT

Test Method: BS EN 22610: 2006 (Surgical drapes, garments and fresh air clothes used as medical devices for patients, hospital staff and equipment - Test method for determination of resistance to wet bacterial permeability) (*)

A test sample is placed on the agar plate on a rotating disc. Bacteria carrier material and coating film are placed on the test sample and all parts are fixed on the disk. A finger is placed on the test sample to apply a certain force ($3N \pm 0.02$). The finger moves on the test sample over the entire surface of the agar within 15 minutes. 5 studies are carried out for 15 minutes. 6. The study is repeated by inverting the sample.

| | |
|--|--|
| Sample amount: | 5 pieces 25x25cm ² |
| Carrier Material: | 30 µm thin, 25x25cm ² Polyurethane Film |
| Coating Material: | 25x25cm ² HDPE Film |
| Microorganism: | Staphylococcus aureus ATCC 29213 |
| Bacterial Concentration (kob / ml): | 1-4x10 ⁴ kob / ml |
| Incubation Conditions: | (36 ± 1) ° C 48 hours |

| RESULTS | | | |
|---|--------|-------------------------|-----|
| Number of Populating Bacteria (cfu) | | Penetration Rate | |
| X₁ | 100 | R_{CUM1} | 0,2 |
| X₂ | 100 | R_{CUM2} | 0,3 |
| X₃ | 0 | R_{CUM3} | 0,3 |
| X₄ | 0 | R_{CUM4} | 0,3 |
| X₅ | 200 | R_{CUM5} | 0,6 |
| Z | 250 | | |
| T | | 650 | |
| <i>X1 X5: Number of colonies growing in 5 parallel petri in the same sample</i> <i>Z: number of colonies growing in the sixth petri dish</i> <i>T: X₁ + X₂ + X₃ + X₄ + X₅ + Z</i> | | | |
| <i>R_{CUM1} = X₁/T</i> <i>R_{CUM2} = (X₂ + X₁)/T</i> <i>R_{CUM3} = (X₃ + X₂ + X₁)/T</i> <i>R_{CUM4} = (X₄ + X₃ + X₂ + X₁)/T</i> <i>R_{CUM5} = (X₅ + X₄ + X₃ + X₂ + X₁)/T</i> | | | |
| BARRIER INDEX (I _B) | | | |
| | Result | Expected value (*) | |
| I_B | 4,3 | ≥2,8 | |
| <i>I_B = 6 - (CUM1 + CUM2 + CUM3 + CUM4 + CUM5)</i> | | | |
| * EN 13795-1:2019 Surgical gowns and drapes - Requirements and test methods are evaluated according to Table-1. | | | |