



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

TEST REPORT
DENey RAPORU



AB-0583-T
20043308 -ing
11-20

Customer name: UNIVERSAL SERTİFİKASYON VE GÖZETİM HİZMETLERİ TİCARET LTD.ŞTİ.
Address: NECİP FAZIL BULVARI KEYAP SİTESİ E2 ÜMRANIYE/İSTANBUL
Buyer name: GENÇ TAAHHÜT GİYİM TEKSTİL İNŞAAT SAN. VE TİC. LTD. ŞTİ.
Contact Person: SUAT KAÇMAZ
Order No: -
Article No: GNC-2213 & GNC-2215
Name and Identity of test item: White protective coverall.
The date of receipt of test item: 18.11.2020
Re-submitted/re-confirmation date: -
Date of test: 18.11.2020-25.11.2020
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: 8

The Turkish Accreditation Agency (TÜRKAK) is signatory to the multilateral agreements of the European co-operation for the Accreditation (EA) and of the International Laboratory Accreditation (ILAC) for the Mutual recognition of test reports.
EKOTEKS LABORATUVAR ve GÖZETİM HİZMETLERİ A.Ş. accredited by TÜRKAK under registration number [AB-0583-T] for ISO 17025:2017 as test laboratory.
The test and/or measurement results, the uncertainties (if applicable) with confidence probability and test methods are given on the following pages which are part of this report.



Date
25.11.2020

Customer Representative
YESİM SAHİN

Head of Testing Laboratory
Sevim A. RAZAK
25.11.2020

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REQUIRED TESTS	RESULT	COMMENTS
PHYSICAL PROPERTIES TESTS		
Abrasion	-	Class 6
Water Permeability	-	Class 6
Tear Strength	-	Class 2
Tensile Strength	-	Class 1
Repellency to Liquids	-	Class 3
Resistance To Penetration By Liquids	-	Class 3
Seam Strength	-	Class 2
Puncture Resistance	-	Class 1
Determination of resistance to damage by flexing	-	Class 3
Flammability	F	See test results
Surface Resistivity ⁽¹⁾	F	See test results
P: Pass F: Fail R: Refer to retailer technologist		
Tests were classified according to BS EN 14325:2018 BS EN 14126 :2003 Protective clothing —Performance requirements and tests methods for protective clothing against infective agents ⁽¹⁾ Requirement was given by the vendor		

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 %. The declaration of conformity was given in accordance with the Simple Acceptance Decision Rule. Tests marked (*) in this report are not included in the accreditation schedule.



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TEST RESULTS

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

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 @2000 revs

CLASS

6

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 20811:2018

Hydrostatic Head Tester, Textest marka Fx 3000 model

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

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

RESULT

260,1 mm SS

246,84 mm SS

207,06 mm SS

208,08 mm SS

REQUIREMENT

>200 mmSS

Sample 1

Sample 2

Sample 3

Sample 4

Average

231,0 mm SS



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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)

RESULT

Width

22,6 N

Length

56,1 N

CLASS

2

Classified according to
the Table-4

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).

RESULT

Width

41,2 N

Length

118,6 N

CLASS

2

Classified according to
the Table-5

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
REPELLENCY TO LIQUIDS

Clause 4.12 Repellency to Liquids (EN ISO 6530:2005)

When tested in accordance with EN ISO 6530 for repellency to the liquid chemicals given in Table -9, the material shall be classified according to the levels performance in given Table-10 for each chemical tested. Use those liquids against which protection is required, water is also convenient and safe liquid for general screening purposes. Performed in the conditioned room ($20 \pm 2^\circ\text{C}$ - $65\% \pm 4$).

For each test liquid, cut six test specimens of $(360 \pm 2)\text{mm}$ by $(235 \pm 5)\text{mm}$ from the sample. Chemicals shall be of analytical purity grade. Discharged the test liquid (10cm 3) within (10 \pm 1)s

Table-9 List of reference chemicals for absorption ,penetration and repellency testing

Chemical	Concentration weight %	Temperature of chemical ($\pm 2^\circ\text{C}$)
Sulfuric Acid (H_2SO_4)	30	20
Sodium Hydroxide (NaOH)	10	20
o-Xylene	Undiluted	20

Table 10- Classification of Repellency to liquids

Class	Repellency Index (I_R)
3	> 90 %
2	> 80 %
1	> 70 %

Clause 4.13 Resistance to penetration by liquids (EN ISO 6530)

Table 11- Classification of Resistance to penetration by liquids

Class	Penetration Index (I_p)
3	< 1 %
2	< 5 %
1	< 10 %

RESULT

Chemical	Concentration weight %	I_p	Class	I_R	Class
Sulfuric Acid (H_2SO_4)	30	0%	3	%92,58	3
Sodium Hydroxide (NaOH)	10	0%	3	%96,38	3
o-Xylene	Undiluted	0%	3	%94,31	3

I_p : index of penetration
 I_R : index of repellency
 I_A : index of absorption



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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	76,22 N	FTS	2 Classified according to the Table-13
Inner side	62,26 N	FTS	
Front center seam	62,13 N	FTS	
Back center seam	63,45 N	FTS	
Waist	66,47 N	FTS	
Sleeve seam	72,27 N	FTS	
Hat	73,06 N	FTS	
Glider	73,06 N	-	

FTJ : Fabric Tear At Jaw

Table 13- Classification of Seam Strength

<u>CLASS</u>	<u>Seam strength</u>
6	>500 N
5	>300 N
4	>125 N
3	>75 N
2	>50 N
1	>30 N



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TEST RESULT

PUNCTURE RESISTANCE

Clause 4.10.Puncture Resistance EN 863

RESULT

5.5 N

CLASS

I

Classified according to
the Table-6

Table-4 Classification of Puncture Resistance
(Tablo-6)

Class	Puncture Resistance
6	>250 N
5	>150 N
4	>100 N
3	>50 N
2	>10 N
1	>5N

SURFACE RESISTIVITY; EN 1149-1:2006

Ohm meter (METRISO 3000) was used.

Original sample was tested as the client's request

Pre-Treatment

Atmosphere for conditioning and
testing (23± 1)°C, (25± 5)%RH

Conditioning time ≥ 24 hours

Applied voltage - 100 Volt

Number of samples tested 5

Measurement

Surface Resistance

RESULT

Surface Resistivity

REQUIREMENT

1	1.88 x 10 ¹² Ohms	3.7 x 10 ¹³ Ohms	<2.5 x 10 ⁹ Ω
2	2.66 x 10 ¹² Ohms	5.2 x 10 ¹³ Ohms	
3	3.89 x 10 ¹² Ohms	7.7 x 10 ¹³ Ohms	
4	2.29 x 10 ¹² Ohms	4.5 x 10 ¹³ Ohms	
5	2.78 x 10 ¹² Ohms	5.5 x 10 ¹³ Ohms	
Geometrical Mean	2.62 x 10 ¹² Ohms	5.1 x 10 ¹³ Ohms	

The resistivity is calculated by: $\rho = k \times R$, and $k = 19.8$

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TEST SONUÇLARI

DETERMINATION OF RESISTANCE TO DAMAGE BY FLEXING METHOD C (CRUMPLE/FLEX) (*)
Test Metot : ISO 7854 :1995 Rubber- or plastics-coated fabrics -Determination of resistance to damage by flexing Method C (Crumple /Flex Test) (*)Clause 4.5
Two test pieces were prepared each 220 mm long x 190 mm width
After cycle has finished examine the damage of samples and classified

RESULT

>5 000 cycles

CLASS

Class 3
Classified according to
the Table-2

No damage observed

Table 2-Classification of flex cracking resistance

Class	Number of cycles
6	> 100 000
5	>40 000
4	> 15 000
3	> 5 000
2	> 2 500
1	> 1000

FLAMMABILITY ;

Clause 4.14. Flammability Resistance EN 13274-4:2001(*)- Method 3

Conditioning	65±5 % RH, 20±2°C/24 hours
Test atmosphere	10-30° (±1°C)
Flame height	40± 2 mm
Gas type	Propane
Flame temperature	800±50°C
Sample size tested	105 x 50mm
Test result	FAIL

RESULT The flame remained on the sample for 7 seconds