Asociación de Investigación de la Industria Textil – C.I.F.: G03182870

TEST REPORT

2022CN6246

DATE OF RECEPTION

Date Format: dd/MM/yyyy 18/08/2022

DATE OF TESTS

Starting : 06/09/2022

Ending: 29/09/2022

APPLICANT

KUNSHAN SUNSHINETEX NEW MATERIAL Co. Ltd.
No. 417 Sanxiang Road
CN-215300 Kunshan
JIANGSU

REFERENCE OF SAMPLES

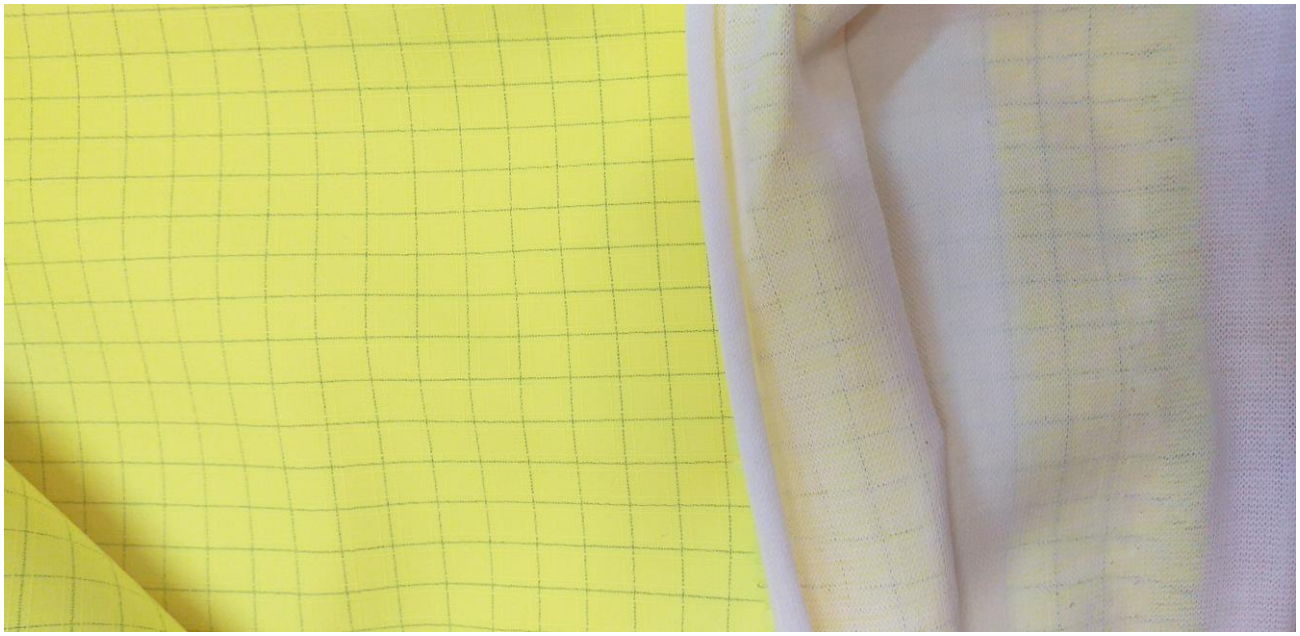
Reference by AITEX	Reference provided by the customer	Sample description
2022CN6246-S01	POBFC3DY-1	HV yellow woven fabric, with white laminate in inner surface and white knitted fabric

TESTS CARRIED OUT

- DETERMINATION OF RESISTANCE TO WATER PENETRATION
- PRE-TREATMENT FOR DOMESTIC WASHING AND DRYING PROCEDURES FOR TEXTILE TESTING
- RESISTANCE TO FLEXING PRETREATMENT
- WATER VAPOUR RESISTANCE
- DETERMINATION OF BREAKING STRENGTH AND ELONGATION
- DETERMINATION OF DIMENSIONAL CHANGE IN WASHING AND DRYING
- DETERMINATION OF TEAR RESISTANCE

Tests marked with * are not included within the scope of the acreditation.

DESCRIPTION OF SAMPLES



Reference by AITEX: 2022CN6246-S01

Reference provided by the customer:

POBFC3DY-1

Sample description:

According to information supplied by manufacturer:

Fabric ref.- POBFC3DY-1
Composition and percentage: 98% Polyester and 2% Carbon, 60% Protex and 40% Cotton
Color: Fluo yellow

Composition:

98% Polyester and 2% Carbon, 60% Protex and 40% Cotton

Reference by AITEX	Reference provided by the customer
2022CN6246-S01.1	Fabric after 5 wash cycles
2022CN6246-S01.2	Fabric after abrasion
2022CN6246-S01.3	Fabric after flexing
2022CN6246-S01.4	Fabric after oil and fuel pretreatment

EXECUTIVE SUMMARY

	Reference	Test/Standard	Result
EN 343:2019	2022CN6246-S01	DETERMINATION OF RESISTANCE TO WATER PENETRATION **EN 20811:1992**	CLASS 1
		WATER VAPOUR RESISTANCE **EN ISO 11092:2014** To carry out the test, the grid described in informative Annex C of ISO 11092:2014 has been used, because after the conditioning carried out according to point C.2 of said Annex, the formation of bubbles or wrinkles has been observed in the specimen.	CLASS 3
		DETERMINATION OF BREAKING STRENGTH AND ELONGATION **EN ISO 1421:2016**	PASS
		DETERMINATION OF TEAR RESISTANCE **EN ISO 4674-1:2016 Met.A**	PASS
	2022CN6246-S01.1	DETERMINATION OF RESISTANCE TO WATER PENETRATION **EN 20811:1992**	CLASS 4
		DETERMINATION OF DIMENSIONAL CHANGE IN WASHING AND DRYING **EN ISO 5077:2008**	PASS
	2022CN6246-S01.2	DETERMINATION OF RESISTANCE TO WATER PENETRATION **EN 20811:1992**	CLASS 4
	2022CN6246-S01.3	DETERMINATION OF RESISTANCE TO WATER PENETRATION **EN 20811:1992**	CLASS 4
	2022CN6246-S01.4	DETERMINATION OF RESISTANCE TO WATER PENETRATION **EN 20811:1992**	CLASS 4

REQUIREMENT SUMMARY

DETERMINATION OF RESISTANCE TO WATER PENETRATION

REQUIREMENT ACCORDING EN 343:2019

	CLASS 1	CLASS 2	CLASS 3	CLASS 4
Material before pre-treatment	≥ 8000 Pa	---	---	---
Material after pre-treatment	---	≥ 8000 Pa	≥ 13000 Pa	≥ 20000 Pa
Seams before pre-treatment	---	≥ 8000 Pa	≥ 13000 Pa	---
Seams after pre-treatment	---	---	---	≥ 20000 Pa

WATER VAPOUR RESISTANCE

REQUIREMENT ACCORDING EN 343:2019

Class 1	Class 2	Class 3	Class 4
$R_{et} > 40$	$25 < R_{et} \leq 40$	$15 < R_{et} \leq 25$	$R_{et} \leq 15$

DETERMINATION OF BREAKING STRENGTH AND ELONGATION

REQUIREMENT ACCORDING EN 343:2019

The external material must resist a breaking load in both directions ≥ 450 N. For materials with an elongation of more than 50% this requirement is not applicable

DETERMINATION OF DIMENSIONAL CHANGE IN WASHING AND DRYING

REQUIREMENT ACCORDING EN 343:2019

The dimensional change shall not exceed ± 3%, both in width warp and in length weft.

The dimensional change of knitted fabrics shall not exceed ±5%, both in width Crosswise and in length Lengthwise.

DETERMINATION OF TEAR RESISTANCE

REQUIREMENT ACCORDING EN 343:2019

The external material must resist a determination of tear resistance in both directions ≥ 20 N.

RESULTS

DETERMINATION OF RESISTANCE TO WATER PENETRATION

Standard

EN 20811:1992

Equipment

Hydrostatic Head Tester

Atmosphere for conditioning

Temperature (20 ± 2) ºC **Relative Humidity** (65 ± 4) %

Water temperature

20ºC

Rate of increase of water pressure

(10±0.5) cm H_2O/min ((980±50) Pa/min)

Surface exposed

External face

Manometer precision

± 0,5 cm H_2O

Reference

2022CN6246-S01

Test date

Start date 06/09/2022 **End date** 07/09/2022
Reference

Atmosphere for testing

Temperature (20.0± 2) ºC **Relative Humidity** (65.0 ± 4) %

Specimen	Pressure (cm/H_2O)	Pressure (Pa)	Less pressure (Pa)
1	>200	>20000	
2	>200	>20000	
3	>200	>20000	>20000
4	>200	>20000	

RESULTS

PRE-TREATMENT FOR DOMESTIC WASHING AND DRYING PROCEDURES FOR TEXTILE TESTING

Standard

EN ISO 6330:2012

Test date

Start date 07/09/2022 **End date** 08/09/2022

Washing procedure

4N

Washing temperature

40ºC

Washing cycles

5

Driying procedure

F (type A1 drum dryer)

Washing powder

ECE detergent 98 + sodium perborate + TAED

Reference
2022CN6246-S01

Units	Dry mass of the samples(Kg)	Counterweight mass Kg *Kg*	Counterweight type	Equipment
1	0.14	1.8	Type III */ Type III*	WASCATOR 13151E12

RESULTS

DETERMINATION OF RESISTANCE TO WATER PENETRATION

Standard

EN 20811:1992

Equipment

Hydrostatic Head Tester

Atmosphere for conditioning

Temperature (20 ± 2) ºC **Relative Humidity** (65 ± 4) %

Water temperature

20ºC

Rate of increase of water pressure

(10±0.5) cm H_2O/min ((980±50) Pa/min)

Surface exposed

External face

Manometer precision

± 0,5 cm H_2O

Reference

2022CN6246-S01.1

Test date

Start date 08/09/2022 **End date** 09/09/2022
Reference

Atmosphere for testing

Temperature (20.0± 2) ºC **Relative Humidity** (65.0 ± 4) %

Specimen	Pressure (cm/H_2O)	Pressure (Pa)	Less pressure (Pa)
1	>200	>20000	>20000
2	>200	>20000	
3	>200	>20000	
4	>200	>20000	

RESULTS

DETERMINATION OF RESISTANCE TO WATER PENETRATION

Standard

EN 20811:1992

Equipment

Hydrostatic Head Tester

Atmosphere for conditioning

Temperature (20 ± 2) ºC **Relative Humidity** (65 ± 4) %

Water temperature

20ºC

Rate of increase of water pressure

(10±0.5) cm H_2O/min ((980±50) Pa/min)

Surface exposed

External face

Manometer precision

± 0,5 cm H_2O

Reference

2022CN6246-S01.2

Test date

Start date 06/09/2022 **End date** 14/09/2022
Reference

Atmosphere for testing

Temperature (20.0± 2) ºC **Relative Humidity** (65.0 ± 4) %

Specimen	Pressure (cm/H_2O)	Pressure (Pa)	Less pressure (Pa)
1	>200	>20000	
2	>200	>20000	
3	>200	>20000	>20000
4	>200	>20000	

RESULTS

RESISTANCE TO FLEXING PRETREATMENT

Standard

EN ISO 7854:1997 Mét.C

Reference

2022CN6246-S01

Test date

Start date	07/09/2022	**End date**	07/09/2022

Specimens	**Direction**	**Flex cycles**
4	Warp and Weft	9000

Visual inspection after flex cycles

1. Material damage	Doesn't exist damages
2. Description of the damage	---
3. Fissures	Doesn't exist fissures
a. Deepness fissures	---
b. Number of fissures	---
c. Longitude of fissures	---
4. Deslaminated	Doesn't exist deslaminated

RESULTS

DETERMINATION OF RESISTANCE TO WATER PENETRATION

Standard

EN 20811:1992

Equipment

Hydrostatic Head Tester

Atmosphere for conditioning

Temperature (20 ± 2) ºC **Relative Humidity** (65 ± 4) %

Water temperature

20ºC

Rate of increase of water pressure

(10±0.5) cm H_2O/min ((980±50) Pa/min)

Surface exposed

External face

Manometer precision

± 0,5 cm H_2O

Reference

2022CN6246-S01.3

Test date

Start date 08/09/2022 **End date** 09/09/2022
Reference

Atmosphere for testing

Temperature (20.0± 2) ºC **Relative Humidity** (65.0 ± 4) %

Specimen	Pressure (cm/H_2O)	Pressure (Pa)	Less pressure (Pa)
1	>200	>20000	>20000
2	>200	>20000	
3	>200	>20000	
4	>200	>20000	

RESULTS

DETERMINATION OF RESISTANCE TO WATER PENETRATION

Standard

EN 20811:1992

Equipment

Hydrostatic Head Tester

Atmosphere for conditioning

Temperature (20 ± 2) ºC **Relative Humidity** (65 ± 4) %

Water temperature

20ºC

Rate of increase of water pressure

(10±0.5) cm H_2O/min ((980±50) Pa/min)

Surface exposed

External face

Manometer precision

± 0,5 cm H_2O

Reference

2022CN6246-S01.4

Test date

Start date 26/09/2022 **End date** 29/09/2022
Reference

Atmosphere for testing

Temperature (20.0± 2) ºC **Relative Humidity** (65.0 ± 4) %

Specimen	Pressure (cm/H_2O)	Pressure (Pa)	Less pressure (Pa)
1	>200	>20000	
2	>200	>20000	
3	>200	>20000	>20000
4	>200	>20000	

RESULTS

WATER VAPOUR RESISTANCE

Standard

EN ISO 11092:2014

Test date

Start date 22/09/2022 **End date** 22/09/2022

Atmosphere for conditioning

Temperature (35 ± 0.5) ºC **Relative Humidity** (40 ± 3) %

Conditioning time

24 h. ambient conditions at (35 ± 0.5) ºC and (40 ± 3) % RH

Uncertainty

± 7% of the result

Number of test specimens per material to be tested

Tested 3

Disposition test specimens

The inner face is in contact to the measurement surface.

Reference	Specimen	Water vapour resistance R_{et} ($m^2 \cdot Pa/W$)
2022CN6246-S01	**1**	19.69
	2	19.56
	3	20.92
	Average	20.06

Observation or deviation of the standard

To carry out the test, the grid described in informative Annex C of ISO 11092:2014 has been used, because after the conditioning carried out according to point C.2 of said Annex, the formation of bubbles or wrinkles has been observed in the specimen.

RESULTS

DETERMINATION OF BREAKING STRENGTH AND ELONGATION

Standard

EN ISO 1421:2016

Equipment

INSTRON Dynamometer

Conditioned date

Start date 08/09/2022 **End date** 08/09/2022

Test date

Start date 08/09/2022 **End date** 08/09/2022

Gauge length	Pretension	Gauge speed
Warp:200 mm	**Warp:**0.5 N	**Warp:**100 mm/min
Weft:200 mm	**Weft:**0.5 N	**Weft :**100 mm/min

Atmosphere for conditioning

Temperature (20 ± 2) ºC **Relative Humidity** (65 ± 4) %

Number of test specimens per material to be tested

Tested 5 **Rejected** 0

State of the specimens

Conditioned

Reference

2022CN6246-S01

Direction	Maximum force *(N)*	Medium strength	C.V.	Elongation to the maximum load*(%)*	Average elongation	C.V.
Lengthwise	931	929	3.5	22.5	22	2.5
	909			22		
	945			22		
	973			23		
	889			21.5		
Crosswise	636	629	5.4	20.5	20	5.7
	607			19.5		
	672			21		
	585			18.5		
	644			21		

Uncertainty

± 5% assay value of the measured

RESULTS

DETERMINATION OF DIMENSIONAL CHANGE IN WASHING AND DRYING

Standard

EN ISO 5077:2008

Preparation, marking and measuring of fabric specimens according to EN ISO 3759:2011

Start date 23/09/2022 **End date** 28/09/2022

Washing powder

98 ECE reference detergent without optical brightener.

Washing cycles

5

Uncertainty

± 0.4 %

Reference

2022CN6246-S01.1

Specimen	Direction	Dimensional change (%)
1	WARP	-1.0
	WEFT	-1.0

Note

Positive dimensional change indicates lengthening. Negative dimensional change indicates shrinkage

RESULTS

DETERMINATION OF TEAR RESISTANCE

Standard

EN ISO 4674-1:2016 Met.A

Equipment

INSTRON Dynamometer

Test date

Start date 13/09/2022 **End date** 13/09/2022

Conditioned date

Start date 06/09/2022 **End date** 13/09/2022

Atmosphere for conditioning

Temperature (20 ± 2) ºC **Relative Humidity** (65 ± 5) %

State of the specimens

Condionated

Number of test specimens per material to be tested

Tested 5 each way **Rejected** 0

Procedure

Method A

Specimen size

(200x150) mm

Reference

2022CN6246-S01

Tear	Specimen	Average load	C.V.
Lengthwise	96	**89**	7.96
	89		
	92		
	79		
	89		
Cross-cutting	48	**52.8**	7.28
	55		
	57		
	53		
	51		

Note

±7% assay value of the measured

Lucia Martinez
Head of PPE and Ballistics department



Date: 30/09/2022 13:51:32
Digitally Signed by:ISABEL LLOPIS LUMBRERAS - NIF:21678551Q

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