

# TEST REPORT

N° **2016CN0360**

DATE OF RECEPTION	08/12/2016	APPLICANT Shanghai XM Group LTD Room 2403,88 Guangxin Road CN-200063 Shanghai CHINA
DATE TEST	Starting: 08/12/2016 Ending: 06/02/2017	

DESCRIPTION AND IDENTIFICATION OF SAMPLES

SAMPLES REFERENCED:

-“FABRIC FR-OXFORD 300D”.

According to the information supplied by the customer:

Fabric Ref: FR-OXFORD 300D  
Composition: 98% Polyester/ 2% antistatic plain 1/1 PU (FR)  
Weight: 250GSM  
Color: Hi-Viz Orange  
Others: 98P/2AS-250FR-PU,  
Part Number: CC-072016  
Roll Number: 201

TESTS CARRIED OUT

- DETERMINATION OF COORDINATES (X,Y,Y)
- PRE-TREATMENT FOR DOMESTIC WASHING AND DRYING PROCEDURES FOR TEXTILE TESTING
- COLOUR FASTNESS TO RUBBING
- COLOUR FASTNESS TO PERSPIRATION
- COLOUR FASTNESS TO DOMESTIC AND COMMERCIAL LAUNDERING
- DETERMINATION OF DIMENSIONAL CHANGE IN DOMESTIC WASHING AND DRYING
- FABRIC TENSILE STRENGTH AND RUPTURE ELONGATION
- DETERMINATION OF TEAR RESISTANCE
- WATER VAPOUR RESISTANCE
- CHARGE DECAY
- WATER PENETRATION RESISTANCE. TEST UNDER HYDROSTATIC PRESSURE
- DETERMINATION OF FLEX CRACKING AND CRACK GROWTH
- WATER PENETRATION RESISTANCE. TEST UNDER HYDROSTATIC PRESSURE
- PRE-TREATMENT\*
- WATER PENETRATION RESISTANCE. TEST UNDER HYDROSTATIC PRESSURE
- LIMITED FLAME SPREAD
- FABRIC TENSILE STRENGTH AND RUPTURE ELONGATION
- DETERMINATION OF TEAR RESISTANCE

ENAC is a signatory to the Multilateral Agreement (MLA), (MRA Mutual Recognition Agreement) of the European Cooperation for Accreditation (EA) and the International Laboratory Accreditation Cooperation (ILAC), in testing.

ATTACHED

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SAMPLE(S) SEALED

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OF

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## RESULTS

### DETERMINATION OF COORDINATES (X,Y,Y)

**Standard**

UNE-EN ISO 105-J01:2000

**Apparatus**

Konica Minolta ((0921E06) 400nm-700nm)

**Illuminant**D<sub>65</sub>**Observant**

2°

**Measuring geometry**

45/0

**Specular component and UV filter**

Excluded

**Observation area**

Small

**Conditioning of samples****Initiation date** 08/12/2016 **End date** 03/01/2017**Temperature** (20 ± 2) °C **Humidity** (65 ± 5) %**Test date****Initiation date** 09/12/2016 **End date** 03/01/2017**Number of measurements**

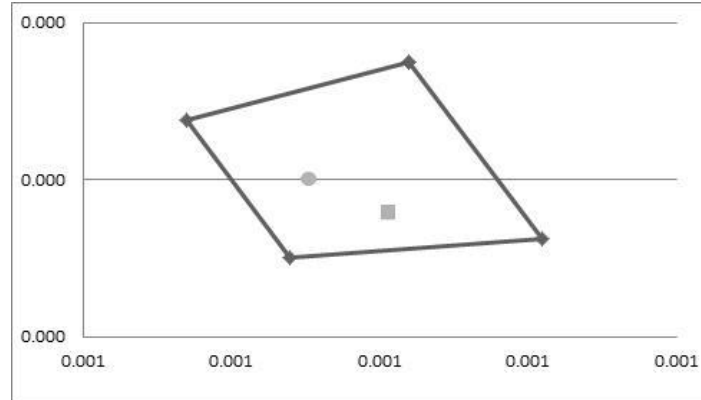
5

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## RESULTS

Reference  
FABRIC FR-OXFORD 300D



Reference	x	y	Y minimum
◆ Coordinate 1	0,6100	0,3900	0,4000
◆ Coordinate 2	0,5350	0,3750	
◆ Coordinate 3	0,5700	0,3400	
◆ Coordinate 4	0,6550	0,3450	
■ FABRIC FR-OXFORD 300D (Original)	0,6030	0,3516	0,4386
● FABRIC FR-OXFORD 300D (After testing light fastness)	0,5761	0,3603	0,4737
▲ FABRIC FR-OXFORD 300D (After 5 washing cycles at 60°C)	0,6028	0,3517	0,4494
<b>Uncertainly</b>	± 0.0013	± 0.0013	± 0.0036

### REQUISITE

The chromatic coordinates must be situated within the area defined by the coordinates specified in the Standard UNE-EN ISO 20471:2013 point (5) and the luminance factor shall exceed 0,40 specified in the Standard UNE-EN ISO 20471:2013 point (5).

PASS



## RESULTS

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

**Standard**

ISO 6330:2012

**Standard deviation**

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**Reference**

Sample 1 FABRIC FR-OXFORD 300D

**Units**

1

**Equipment**

Waskator 13096E12

**Dryer machine**

ACCUDRY  
13372E12

**Washing procedure**

6N

**Washing cycles**

5

**Drying procedure**

F (tumble dryer)

**Washing powder**

ECE detergent 98 + sodium perborate + TAED

Units	Dry mass of the samples	Counterweight mass	Equipment
1	1,630 Kg	0,300 Kg of Polyester	Waskator 13096E12

**Start and finish data test**

28/12/2016 - 30/12/2016

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## RESULTS

### COLOUR FASTNESS TO RUBBING

**Standard**

ISO 105-X12:2016

**Apparatus**

Crockmeter

**Starting test date**

04/01/2017

**Ending test date**

11/01/2017

**Conditioning time**

&gt; 4 H

**Atmosphere for conditioning and testing****Temperature** (20±2) °C**Relative Humidity** (65±2) %Hr**Pin**

Cylindrical

**Applied force**

(9 ± 0,2) N

**% of water absorption for rubbing in humid**

95-100 %

REFERENCE	DIRECTION	DRY STAINING
FABRIC FR-OXFORD 300D	Warp	4-5
	Weft	4-5

**REQUISITE**

The limit set by the Standard UNE-EN ISO 20471:2013 point (5.3.1) for color fastness to rubbing is 4, in wet.

<b>PASS</b>
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## RESULTS

### COLOUR FASTNESS TO PERSPIRATION

**Standard**

UNE-EN ISO 105-E04:2013

**Apparatus**

Perspirometer

**ALKALINE SOLUTION**

Aparatus Code 02022I04 (sweat basic)

REFERENCE	FABRIC FR-OXFORD 300D
CHANGE IN COLOUR	STAINING
5	Cotton Polyester 4-5 4-5

**ACID SOLUTION**

Aparatus Code 02054I04 (sweat acid)

REFERENCE	FABRIC FR-OXFORD 300D
CHANGE IN COLOUR	STAINING
5	Cotton Polyester 4-5 4-5

**REQUISITE**

The limit set by the Standard UNE-EN ISO 20471:2013 point (5.3.2) for testing of colour fastness to perspiration, is 4 for degradation and 4 for staining

**PASS**



## RESULTS

### COLOUR FASTNESS TO DOMESTIC AND COMMERCIAL LAUNDERING

**Standard**

UNE-EN ISO 105-C06:2010

**Apparatus**

Gyrowash

**Test number**

C1M

**Temperature**

60 °C

**Steel balls**

50

**Detergent**

Standardized ECE soap reference without optical or chemical whitener

**Test piece drying in forced-air circulation dryer**

REFERENCE	CHANGE IN COLOUR	STAINING	
FABRIC FR-OXFORD 300D	5	Cotton 4-5	Polyester 4-5

**REQUISITE**

The limit set by the Standard UNE-EN ISO 20471:2013 point (5.3.3) for testing of colour fastness to washing, is 4-5 for degradation and 4 for staining.

**PASS**

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## RESULTS

### DETERMINATION OF DIMENSIONAL CHANGE IN DOMESTIC WASHING AND DRYING

**Standard**

UNE-EN ISO 5077:2008 + ERRATUM:2008

**Preparation, marking and measuring of fabric specimens according to UNE-EN ISO 3759:2011**
**Starting test date** 23/12/2016 **Ending test date** 10/01/2017

**Washing procedure**

 6N ( $T^a = 60 \pm 3^{\circ}\text{C}$ ); Total dry load test samples and the counterweight  $2 \pm 0.1$  Kg) according to ISO 6330:2012

**Used apparatus**

Wascator type A-Horizontal drum, front loading

**Used equipment**

13096E12

**Detergent**

98 ECE reference detergent without optical brightener.

**Counterweight**

Type III - 100% polyester

**Number of washing cycles**

5

**Drying type**

A3

**Procedure F - Tumble dry**
**Uncertainty of test (% of the measured value)**
 $\pm 15 \%$ 

Reference	Specimen	Direction	Dimensional change (%)	Average result	
				Direction	Dimensional change (%)
FABRIC FR-OXFORD 300D	1	Warp	-1,0	Warp	-1,0
		Weft	-1,0		
	2	Warp	-1,0	Weft	-1,0
		Weft	-1,0		

**REMARK**

Negative dimensional change indicates shrinkage

**REQUISITE**

 In accordance with the Standard UNE-EN ISO 20471:2013 point (5.4.1), the dimensional change shall not exceed  $\pm 3\%$ , both in width (warp) and in length (weft).

<b>PASS</b>
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## RESULTS

### FABRIC TENSILE STRENGTH AND RUPTURE ELONGATION

**Standard**

UNE-EN ISO 1421:1999 Method 1

**Apparatus**

INSTRON Dynamometer

**Gauge length**

100 mm

**Rate of extension**

100 mm/min

**Mounting Laxo**
**Atmosphere for conditioning and testing**

Temperature	(20±2) °C	Relative humidity	(65±4) %
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**N° of specimens**

Tested	5 for each direction	Rejected	0
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**State of the specimens**

Conditioning

Reference	FABRIC FR-OXFORD 300D			
Direction	Average load (N)	CV (%)	Elongation to the maximum load (%)	CV (%)
Lengthwise	1157	3.0	26.5	1.4
	1103		27.0	
	1088 <b>1108</b>		26.5 <b>26.5</b>	
	1110		26.0	
	1082		26.0	
Crosswise	1042	2.0	27.5	4.2
	1080		28.5	
	1035 <b>1051</b>		27.0 <b>27.5</b>	
	1046		25.5	
	1052		28.5	

**Remark**

Is determined the Lengthwise and Crosswise directions, respectively.

**REQUISITE ACCORDING TO STANDARD UNE-EN 343:2004 + A1: 2008/AC:2010**

 The material must resist a breaking load in both directions  $\geq 450$  N.

PASS
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**REQUISITE ACCORDING TO STANDARD EN ISO 20471:2013 POINT 5.5.3**

 The tensile strength of coated fabrics and laminates must resist a breaking load in both directions  $\geq 100$  N.

PASS
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## RESULTS

### DETERMINATION OF TEAR RESISTANCE

**Standard**

UNE-EN ISO 4674-1:2004

**Test procedure**

Method A

**Apparatus**

INSTRON Dynamometer

**Atmosphere for conditioning and testing**

temperature (20±2) °C

Relative humidity (65±5) %

**N° of specimens**

Tested 5 for each direction

Rejected 0

**State of the specimens**

Conditioned

**Specimen size**

(200x150) mm.

Reference	Tear	Average load (N)	C.V. (%)
FABRIC FR-OXFORD 300D	Warp	83	3.0
	Weft	130	4.3

**REQUISITE ACCORDING TO STANDARD UNE-EN 343:2004 + A1: 2008/AC:2010**

The external material must resist a determination of tear resistance in both directions  $\geq 25$  N.

PASS



## RESULTS

### WATER VAPOUR RESISTANCE

**Standard**

EN ISO 11092:2014

**Test date**

11/01/2017

**Uncertainty of the measurement**

0.24 m<sup>2</sup>Pa/W

**Observation or deviation from the Standard**

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**Apparatus**

SKIN MODEL. Sweating guarded hotplate 12004I12

**Test atmosphere**

Temperature (35.0 ± 0.5) °C

Relative humidity (40 ± 3) %

**Conditioning**

Temperature (35.0 ± 0.5) °C

Relative humidity (40 ± 3) %

Time 24 hours

**Sample description**

Orange laminated fabric.

**Disposition test specimens**

The inner face is in contact to the measurement surface.

**Pre-treatment**

Without pre-treatment.



## RESULTS

### Test results

Reference	Specimen	Water vapour resistance $R_{et}$ (m <sup>2</sup> Pa/W)
FABRIC FR-OXFORD 300D	Specimen 1	28,10
	Specimen 2	27,84
	Specimen 3	28,23
	Average	<b>28,06</b>

According to the requirements of standard (EN 343:2003+A1:2007 + EN 343:2003+A1:2007/AC:2009), water vapour resistance of all layers of the garment shall be in accordance with the following table:

CLASS 1	CLASS 2	CLASS 3
40 < Ret	20 < Ret ≤ 40	Ret ≤ 20

**CLASS 2**



## RESULTS

### CHARGE DECAY

#### Standard

UNE-EN 1149-3:2004

#### Conditioned

24h in indoor ambient conditions at  $23 \pm 1$  °C and  $25 \pm 5$  % HR

#### Ambient conditions test

23,2 °C and 22,0 % HR

#### Test method used

Induction charge (Test method 2)

#### Potential applied

( $1200 \pm 50$ ) V in 30  $\mu$ s

#### Time measurement

30s

#### Deviation from the Standard

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#### Test date

06/02/2017

#### Tested material

Fluorescent orange woven fabric, white laminated fabric

#### Measurement uncertainty

Shielding factor:  $\pm 0,02$

$t_{50}$ :  $\pm 0,01$  s

#### Pre-treatment

5 washing cycles at 60°C, according to the standard ISO 6330:2012, method 6N, F drying (tumble dry)

Reference	FABRIC FR-OXFORD 300D	
Specimen	Shielding factor (units)	Decay half time (s)
1	0,96	<0,01
2	0,95	<0,01
3	0,95	<0,01
<b>Average</b>	<b>0,95</b>	<b>&lt;0,01</b>

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## RESULTS

ACCORDING TO STANDARD UNE-EN 1149-5:2008 PASS

### ACCEPTANCE CRITERION ACCORDING TO UNE-EN 1149-3:2004 AND UNE-EN 1149-5:2008, METHOD INDUCTION CHARGING

Requisites according to Standard UNE-EN 1149-5:2008 for the induction charge method according to the Standard UNE-EN 1149-3:2004 are:

$$t_{50} < 4 \text{ s or } S > 0,2$$

Where,  $t_{50}$  = Decay half time  
S = Shielding factor

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## RESULTS

### WATER PENETRATION RESISTANCE. TEST UNDER HYDROSTATIC PRESSURE

#### Standard

UNE-EN 20811:1993

#### Apparatus

Hydrostatic Head Tester

#### Atmosphere for conditioning and testing

temperature (20±2) °C      Relative humidity (65±4) %

#### Water temperature

20 °C

#### Rate of increase of water pressure

10 cm H<sub>2</sub>O/min ((980±50) Pa/min)

#### Surface exposed

External side

The water pressure was applied from the down side of the test piece

Reference	Specimen	Pressure (cm/H <sub>2</sub> O)	Pressure (Pa)	Less Pressure (Pa)
FABRIC FR-OXFORD 300D	1	>130	>13000	>13000
	2	>130	>13000	
	3	>130	>13000	
	4	>130	>13000	
	5	>130	>13000	

**CLASS 1**

#### REQUISITE ACCORDING TO STANDARD UNE-EN 343:2004 + A1: 2008/AC:2010

	Class 1	Class 2	Class 3
Before pre-treatment	≥ 8000 Pa	---	---



## RESULTS

### WATER PENETRATION RESISTANCE. TEST UNDER HYDROSTATIC PRESSURE

#### Standard

UNE-EN 20811:1993

#### Apparatus

Hydrostatic Head Tester

#### Atmosphere for conditioning and testing

temperature (20±2) °C      Relative humidity (65±4) %

#### Water temperature

20 °C

#### Rate of increase of water pressure

10 cm H<sub>2</sub>O/min ((980±50) Pa/min)

#### Surface exposed

External side

The water pressure was applied from the down side of the test piece

#### Abrasion Pre-treatment

According to standard UNE-EN 343:2004+A1:2008 punto 5.1.3.3

Reference	Specimen	Pressure (cm/H <sub>2</sub> O)	Pressure (Pa)	Less pressure (Pa)
FABRIC FR-OXFORD 300D	1	>130	>13000	>13000
	2	>130	>13000	
	3	>130	>13000	
	4	>130	>13000	

**CLASS 3**

#### REQUISITE ACCORDING TO STANDARD UNE-EN 343:2004 + A1: 2008/AC:2010

	Class 1	Class 2	Class 3
After pre-treatment	---	≥ 8000 Pa	≥ 13000 Pa

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## RESULTS

### DETERMINATION OF FLEX CRACKING AND CRACK GROWTH

**Standard**

UNE-ISO 7854:1997 Method C

**Test date**

09/01/2017

**Used apparatus**

Crumpleflex equipment

**Reference**

FABRIC FR-OXFORD 300D

**Test performance**

Specimens	Direction	Flex cycles
4	Warp and Weft	9000

**Visual inspection after flex cycles**

<b>Material damage</b>	Doesn't exist damage
<b>Description of the damage</b>	---
<b>Fissures</b>	Doesn't exist fissures
a. Deepness fissures	---
b. Number of fissures	---
c. Longitude of fissures	---
<b>Deslaminated</b>	Doesn't exist deslaminated

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## RESULTS

### WATER PENETRATION RESISTANCE. TEST UNDER HYDROSTATIC PRESSURE

#### Standard

UNE-EN 20811:1993

#### Apparatus

Hydrostatic Head Tester

#### Atmosphere for conditioning and testing

Temperature (20±2) °C      Relative humidity (65±4) %

#### Water temperature

20 °C

#### Rate of increase of water pressure

10 cm H<sub>2</sub>O/min ((980±50)Pa/min)

#### Surface exposed

External side

The water pressure was applied from the down side of the test piece

#### Pre-treatment Bending

According to standard UNE-EN ISO 7854:1997 Method C

Reference	Specimen	Pressure (cm/H <sub>2</sub> O)	Pressure (Pa)	Lowest Pressure (Pa)
FABRIC FR-OXFORD 300D	1	>130	>13000	>13000
	2	>130	>13000	
	3	>130	>13000	
	4	>130	>13000	

**CLASS 3**

#### REQUISITE ACCORDING TO STANDARD UNE-EN 343:2004 + A1: 2008/AC:2010

	Class 1	Class 2	Class 3
After pre-treatment	---	≥ 8000 Pa	≥ 13000 Pa



## RESULTS

### WATER PENETRATION RESISTANCE. TEST UNDER HYDROSTATIC PRESSURE

#### Standard

UNE-EN 20811:1993

#### Apparatus

Hydrostatic Head Tester

#### Atmosphere for conditioning and testing

temperature (20±2) °C      Relative humidity (65±4) %

#### Rate of increase of water pressure

20 °C

#### Rate of increase of water pressure

10 cm H<sub>2</sub>O/min ((0,98± 0,05) kPa/min)

#### Surface exposed

External side

The water pressure was applied from the down side of the test piece

#### Washing procedure

5 cycles of washing at 60°C, according ISO 6330:2012, method 6N and AF drying

Reference	Specimen	Pressure (cm/H <sub>2</sub> O)	Pressure (Pa)	Less pressure (Pa)
FABRIC FR-OXFORD 300D	1	>130	>13000	>13000
	2	>130	>13000	
	3	>130 >130	>13000	
	4	>130	>13000	
	5	>130	>13000	

**CLASS 3**

#### REQUISITE ACCORDING TO STANDARD UNE-EN 343:2004 + A1: 2008/AC:2010

	Class 1	Class 2	Class 3
After pretreatment	---	≥ 800 Pa	≥ 13000 Pa

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## RESULTS

### PRE-TREATMENT\*

**Reference**

FABRIC FR-OXFORD 300D

**Test time**

60 minutes

**Used reactives**

Oil, Fuel.

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## RESULTS

### WATER PENETRATION RESISTANCE. TEST UNDER HYDROSTATIC PRESSURE

#### Standard

UNE-EN 20811:1993

#### Apparatus

Hydrostatic Head Tester

#### Atmosphere for conditioning and testing

temperature (20±2) °C      Relative humidity (65±4) %

#### Water temperature

20 °C

#### Rate of increase of water pressure

10 cm H<sub>2</sub>O/min ((980±50)Pa/min)

Surface exposed      External side

The water pressure was applied from the down side of the test piece

#### Pre-treatment with Fuel oil and Oils

According to standard UNE-EN 343:2004+A1:2008 punto 5.1.3.5

Reference	Specimen	Pressure (cm/H <sub>2</sub> O)	Pressure (Pa)	Less Pressure (Pa)
FABRIC FR-OXFORD 300D	Fuel	>130	>13000	>13000
	Fuel	>130	>13000	
	Oil	>130	>13000	
	Oil	>130	>13000	

CLASS 3

#### REQUISITE ACCORDING TO STANDARD UNE-EN 343:2004 + A1: 2008/AC:2010

	Class 1	Class 2	Class 3
After pre-treatment	---	≥ 8000 Pa	≥ 13000 Pa

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## RESULTS

### LIMITED FLAME SPREAD

**Standard**

UNE-EN ISO 15025:2003 (Method A)

**Apparatus**

Equipment for determination of limited flame spread 13008IE12

**Original and after pre-treatment test date**

10/01/2016 - 31/01/2017

**Conditioned**

24h in indoor ambient conditions at  $20 \pm 2$  °C and  $65 \pm 5$  % HR

**Original and after pre-treatment ambient conditions test**

20,3°C and 38,3% HR – 21,1°C and 42,4% HR

**Gas used**

Propane gas

**Deviation from the standard**

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**Face exposed to the flame**

Outer surface

**Tested material**

Fluor Orange woven fabric joined to a white laminated fabric

**Test uncertainty**

$\pm 0,29$  s

**Reference**

FABRIC FR-OXFORD 300D

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## RESULTS

**Pre-Treatment** As received

Specimen	1	2	3	4	5	6
Direction	Warp			Weft		
Flaming to top or either side edge	No	No	No	No	No	No
After flame time (s)	2	0	5	5	7	8
Afterglow time (s)	0	0	0	0	0	0
Loose waste	No	No	No	No	No	No
Inflammation of the filter paper detached from waste	No	No	No	No	No	No
Hole formation	Yes	Yes	Yes	Yes	Yes	Yes

**Pre-Treatment** 5 washing cycles at 60°C, according to standard ISO 6330:2012, method 6N and type F drying (tumble dry)

Specimen	1	2	3	4	5	6
Direction	Warp			Weft		
Flaming to top or either side edge	No	No	No	No	No	No
After flame time (s)	3	1	4	3	7	1
Afterglow time (s)	0	0	0	0	0	0
Loose waste	No	No	No	No	No	No
Inflammation of the filter paper detached from waste	No	No	No	No	No	No
Hole formation	Yes	Yes	Yes	Yes	Yes	Yes

PERFORMANCE LEVEL ACCORDING TO EN ISO 14116:2015 Index 1

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## RESULTS

Requisites to be met Index 1 according to EN ISO 14116:2015, point 7.1

- |  |
|--|
| a) No specimen shall permit any part of the lowest boundary of any flame or the boundary of any hole to reach the upper or either vertical edge. |
| b) No specimen shall give flaming or molten debris.  |
| c) The afterglow time is $\leq 2$ s  |

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## RESULTS

### FABRIC TENSILE STRENGTH AND RUPTURE ELONGATION

**Standard**

UNE-EN ISO 13934-1:2013

**Apparatus**

INSTRON Dynamometer

**Gauge length**

200 mm

**Rate of extension of Warp and Weft**

100 mm/min

**Pretension of**
**Warp**

5 N

**Weft**

5 N

**Atmosphere for conditioning and testing**
**Temperature**

(20±2) °C

**(H.R.) Relative humidity**

(65±4) %

**N° of specimens**
**Tested**

5 for each direction

**Rejected**

0

**Pre-treatment**

5 cycles of washing at 60°C, according to the standard UNE-EN ISO 6330:2012, method 6N and F drying

Reference	FABRIC FR-OXFORD 300D			
Direction	Maximum average load (N)	C.V. (%)	Average Elongation (%)	C.V. (%)
Warp	1100	4.0	23.0	8.5
	1100		25.0	
	1200 <b>1100</b>		<b>26.5</b>	
	1200		27.5	
	1100		28.5	
Weft	930	8.0	23.5	11.5
	930		22.0	
	1100 <b>1000</b>		<b>26.0</b>	
	1000		27.5	
	1100		29.0	

**Remark**

The relative expanded uncertainty of Tensile strength resistance is ±2 % assay value of the measured.

**REQUISITE ACCORDING TO STANDARD ISO 14116:2015**

The material must resist a breaking load in both directions ≥ 150 N.

<b>PASS</b>
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## RESULTS

### DETERMINATION OF TEAR RESISTANCE

#### Standard

UNE-EN ISO 13937-2:2001

#### Apparatus

INSTRON Dynamometer

#### Atmosphere for conditioning and testing

Temperature (20±2) °C      Relative humidity (65±4) %

#### N° of specimens

Tested 5 for each direction      Rejected 0

#### The calculation of averages has been made:

For electronic device

#### Pre-treatment

5 cycles of washing at 60°C, according to the standard UNE-EN ISO 6330:2012, method 6N and F drying

Reference	Tear	Resistance (N)	CV (%)
FABRIC FR-OXFORD 300D	Warp	63	8.2
		76	
		62 <b>67</b>	
		69	
		68	
	Weft	100	6.2
		110	
		93 <b>99</b>	
		93	
		100	

#### Remark

The relative expanded uncertainty of Tear resistance is ± 3.9 % assay value of the measured.

#### REQUISITE ACCORDING TO STANDARD UNE-EN ISO 14116:2008

The external material must resist a determination of tear resistance in both directions ≥ 7.5 N

**PASS**



Lucia Martinez  
Head of PPE and Ballistics department

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- 3.- The original test report is kept in AITEX. An electronic copy of it is delivered to the customer which keeps the value from the original one as far as the security properties of the document are not violated. A hard copy of this report with the AITEX logotype sealed in all the pages, keeps the original value.
- 4.- The results are considered to be the property of the applicant, and AITEX will not communicate them to third parties without prior permission. After one month, AITEX may use the results for statistical or scientific purposes.
- 5.- None of the indications made in this report may be considered as being a guarantee for the trade marks mentioned herein.
- 6.- In the eventuality of discrepancies between reports, a check to settle the same will be carried out in the head offices of AITEX. Also, the applicants undertake to notify AITEX of any complaint received by them as a result of the report, exempting this Centre from all liability if such is not done, the periods of conservation of the samples being taken into account.
- 7.- AITEX may include in its reports, analyses, results, etc., any other evaluation which it considers necessary, even when it has not been specifically requested.
- 8.- The estimated uncertainties in the tests accredited by ENAC are at the client's disposal in AITEX.
- 9.- The original materials and rests of samples, not subject to test, will be retained in AITEX during the twelve months following the issuance of the report, so that any check or claim which, in his case, wanted to make the applicant, should be exercised within the period indicated.
- 10.- This report may only be sent or delivered by hand to the applicant or to a person duly authorised by the same.
- 11.- The results of the tests and the statement of compliance with the specification in this report refer only to the test sample as it has been analyzed / tested and not the sample / item which has taken the test sample.
- 12.- AITEX laboratories are placed in Alcoy.
- 13.- The client must attend at all times, the dates for conducting the tests.