

Eco-245

65% RECYCLED POLYESTER /
35% RECYCLED COTTON /
245 GSM / TWILL 3/1



| | |
|---------------------|---|
| Fabric name | Eco-245 |
| Fabric weight | 245 ± 5 gsm |
| Composition | 65% Recycled Polyester, 35% Recycled Cotton |
| Full width | 152 ± 2 cm |
| Weave | twill 3/1 |
| Finishes | WR |
| Area of use | construction and transport sectors work wear |
| Washing instruction | |

Physical properties*

| | | | warp | weft |
|---|---|------------------|----------|------|
| 1 | Tensile strength, N | ISO 13934-1:2013 | 1600 | 450 |
| 2 | Tearing strength, N | ISO 13937-3:2000 | 50 | 23 |
| 3 | Dimensional Stability To Washing, max. | ISO 6330:2000 | 3.0% | 3.0% |
| 4 | Abrasion Resistance | ISO 12947-2:2002 | > 30 000 | |
| 5 | Pilling Resistance (after 1000 rev.) | ISO 12945-2:2000 | 3-4 | |
| 6 | Colour Fastness To Washing (cotton+polyester) 60°C, min. | ISO 105-C06:2010 | | |
| | Colour change | ISO 105-C06:2010 | 4 | |
| | Colour staining | ISO 105-C06:2010 | 3 | |
| 7 | Colour Fastness To Perspiration, min. | ISO 105-E04:2013 | | |
| | Colour change | | 4 | |
| | Colour staining | | 4 | |
| 8 | Colour Fastness To Rubbing, min. | ISO 105-X12:2001 | | |
| | Dry | | 3-4 | |
| | Wet | | 2-3 | |
| 9 | Colour Fastness To Light | ISO 105-B02:2013 | > 4 | |

* The values shown are indicative and may vary slightly from batch to batch.

www.xmtextiles.com

XM TEXTILES EUROPE

Darius ir Gireno st. 42A, Room 509
Vilnius, LT-02189, Lithuania
Tel. +370 52 078 703
info@xmtextiles.com

XM TEXTILES ROMANIA

Sos.Tamasi 20, Hala 6B, Parter,
Buftea, 070000, Ilfov, Romania
Tel. +40 31 630 3639
info@xmtextiles.com

XM TEXTILES ITALIA SRL

Via dei Notai, Blocco 23, Centergross,
40050 Funo di Argelato (BO), Bologna, Italy
Tel. +39 051 952 8202
info@xmtextiles.com

2023EP1356

TEST REPORT

DATE OF RECEPTION

Date Format: dd/MM/yyyy 12/04/2023

DATE OF TESTS

Starting : 17/04/2023

Ending: 18/04/2023

APPLICANT

XM Textiles Europe UAB

Dariaus ir Gireno st. 42A Office 509

LT-02189 Vilnius

Lithuania

Att Irina

REFERENCE OF SAMPLES

| Reference by AITEX | Reference by customer | AITEX sample description |
|--------------------|-----------------------|--------------------------|
| 2023EP1356-S01 | XM-6011 | Reflective tape |

TESTS CARRIED OUT

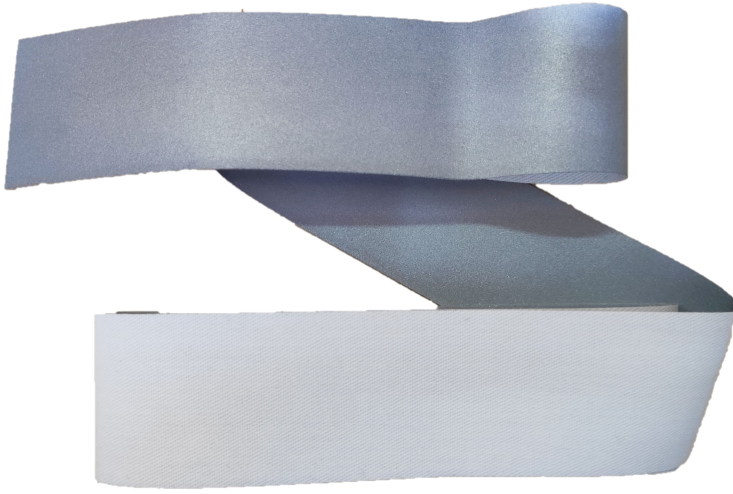
- DETERMINATION OF CANCEROGENIC ARYLAMINES

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





DESCRIPTION OF SAMPLES



Reference by AITEX: 2023EP1356-S01

Reference by customer:

XM-6011

AITEX sample description:

Silver reflective tape.

Information supplied by the customer

Fabric ref. XM-6011

Composition and percentage 100% Cotton, N/A

Weight

Color Silver

Others (if any) 476



RESULTS

DETERMINATION OF CANCEROGENIC ARYLAMINES

Standard

EN 14362-1:2017

Detection System according to

Gas Chromatograph 7890A

Testing Method

GC/MSD

Uncertainty

± 9 mg/Kg

| Reference | Result (mg/Kg) |
|----------------|----------------|
| 2023EP1356-S01 | < 30 |

¹ Arylamines tested

| Substance | | |
|-------------------------|---|-----------------------------|
| 4-Aminobiphenyl | 3,3'-Dimethylbenzidine | 2,4-Diaminoanisole |
| Benzidine | 3,3'-Dimethyl-4,4'-diaminodiphenylmethane | o-Anisidine |
| 4-Chlor-o-toluidine | p-Cresidine | 3,3'-Dichlorobenzidine |
| 2-Naphthylamine | 4,4'-Methylene-bis-2-chloraniline | 2,4,5-Trimethylaniline |
| o-Aminoazotoluene | 4,4'-Oxydianiline | 4,4'-Diaminodiphenylmethane |
| 2-Amino-4-nitrotoluene | 4,4'-Thiodianiline | 2,4-Toluyldiamine |
| p-Chloraniline | o-Toluidine | |
| 3,3'-Dimethoxybenzidine | 4-Aminoazobenzene | |



Lucia Martinez
Head of PPE and Ballistics department



Date: 18/04/2023 17:16:01

Digitally Signed by: ISABEL LLOPIS LUMBRERAS -

NIF: 21678551Q

Liability clauses

- 1-AITEX is liable only for the results of the methods of analysis used, as expressed in the report and referring exclusively to the materials or samples indicated in the same which are in its possession, the professional and legal liability of the Centre being limited to these. Unless otherwise stated, the samples were freely chosen and sent by the applicant.
- 2-AITEX shall not be liable in any case of misuse of the test materials nor for undue interpretation or use of this document.
- 3-The Offer and / or Order to which the applicant gives approval through signature and seal, constitutes the Legally Executable Agreement in which AITEX is responsible for safeguarding and guaranteeing the absolute confidentiality of the management of all the information obtained or created during the performance of the contracted activities.
- 4-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.
- 5-AITEX will provide at the request of the person concerned, the treatment of complaints procedure. In the event that you want to make it, direct it to: calidad@aitex.es.
- 6-AITEX is not responsible for the information provided by customers, which is reflected in the Report, and may affect the validity of the results.
- 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 uncertainties of the tests, which are made explicit in the Results Report, have been estimated for a $k = 2$ (probability of coverage of 95%). If not informed, they are available to the client 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-The client must attend at all times, to the dates of the realization of the tests.
- 13-According to Resolution EA (33) 31, the test reports must include the unique identification of the sample, and any brand or label of the manufacturer may be added. It is not allowed to re-issue test reports of untested sample names (references), they can only be re-issued for error correction or inclusion of omitted data that were already available at the time of the test. The laboratory can not assume responsibility for declaring that the product with the new trade name / trademark is strictly identical to the one originally tested; This responsibility belongs to the client.
- 14-AITEX is not responsible for an inadequate state of the sample received that could compromise the validity of the results, expressing such circumstance, in the test reports.
- 15-When a Declaration of Conformity is requested, if not indicated otherwise, the decision rule according to ILAC-G8: 2009 will be applied with a security zone of 1U and a Probability of False Acceptance <2.5%.
- 16-This report may not be partially reproduced without the written approval of the issuing laboratory.
- 17-AITEX laboratories do not carry out sampling, so that the results of the test reports are applicable to the sample as it was received.

2023EP2120

TEST REPORT

DATE OF RECEPTION

Date Format: dd/MM/yyyy 05/05/2023

DATE OF TESTS

Starting: 10/05/2023

Ending: 13/06/2023

APPLICANT

XM Textiles Europe UAB
 Darius ir Gireno st. 42A Office 509
 LT-02189 Vilnius

Lithuania

Att CERTIFICATION TEAM

REFERENCE OF SAMPLES

| Reference by AITEX | Reference by customer | AITEX sample description |
|--------------------|-----------------------|--------------------------|
| 2023EP2120-S01 | XM-6011 | Reflective tape |

TESTS CARRIED OUT

- DETERMINATION OF RETROREFLECTIVE PHOTOMETRIC PERFORMANCE
- PRE-TREATMENT FOR INDUSTRIAL WASHING AND DRYING PROCEDURES FOR TEXTILE TESTING

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





DESCRIPTION OF SAMPLES



Reference by AITEX: 2023EP2120-S01

Reference by customer:

XM-6011

AITEX sample description:

Silver reflective tape recovered from report 2023EP1693.

Information supplied by the customer

Fabric ref. XM-6011

Composition and percentage 100% Cotton, N/A

Color Silver

Others (if any) 468

| AITEX Subsamples | Subsample Description |
|-------------------|-----------------------------|
| 2023EP2120-S01_P1 | Tape - AFTER WASH 50 cycles |



EXECUTIVE SUMMARY

| EN ISO 20471:2013+EN ISO 20471:2013+AMD1: 2016 | Reference | Test/Standard | Result |
|--|-------------------|--|--------|
| | 2023EP2120-S01_P1 | DETERMINATION OF RETROREFLECTIVE PHOTOMETRIC PERFORMANCE EN ISO 20471:2013+EN ISO 20471:2013+Amd1:2016 | PASS |



REQUIREMENT SUMMARY

DETERMINATION OF RETROREFLECTIVE PHOTOMETRIC PERFORMANCE

REQUIREMENT ACCORDING EN ISO 20471:2013+EN ISO 20471:2013+AMD1:2016

Minimum coefficient of retroreflection in $\text{cd}/(\text{lx}\cdot\text{m}^2)$ for separate performance retroreflective material according to section 6.2.2 of standard EN ISO 20471:2013/A1:2016

| Observation angle Entrance angle | Position | Requirement after pre-treatment |
|-------------------------------------|------------------------------------|---|
| 12' / 5° | $\epsilon_1 = 0^\circ$ vertical | ≥ 100 ($\text{cd}/\text{lx}\cdot\text{m}^2$) |
| 12' / 5° | $\epsilon_2 = 90^\circ$ horizontal | |



RESULTS

DETERMINATION OF RETROREFLECTIVE PHOTOMETRIC PERFORMANCE

Standard

EN ISO 20471:2013+EN ISO 20471:2013+Amd1:2016

Equipment

Optronik rms 10 retroreflectotemer 13320E06

Test date

Start date 06/06/2023 **End date** 08/06/2023

Light lamp

CIE standard Illuminant A

Measurement distance

A=15m
B=16m

To determine the retroreflection coefficient is considered

$\epsilon_1 = 0^\circ$ vertical retroreflective strips.
 $\epsilon_2 = 90^\circ$ Horizontal retroreflective strips.

Reference

2023EP2120-S01_P1

Sample size

100 cm²

Measurement distance

A

| Observation angle Entrance angle | Position | Result (cd/lx·m ²) |
|-------------------------------------|------------------------------------|--------------------------------|
| 12' / 5° | $\epsilon_1 = 0^\circ$ vertical | 103.4 |
| 12' / 5° | $\epsilon_2 = 90^\circ$ horizontal | 105.8 |

Uncertainty

±2% of the value measured

Note

Minimum coefficient of retroreflection in cd/(lx m²) for separate performance retroreflective material according to section 6.2.2 of standard EN ISO 20471:2013/A1:2016

| Reference | Description |
|-------------------|-----------------------------|
| 2023EP2120-S01_P1 | Tape - AFTER WASH 50 cycles |



RESULTS

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

Standard

EN ISO 15797:2018

Washing procedure

Table 4, procedure 2

Washing cycles

50

Washing temperature

75°C

Drying procedure

A (tumble drying) - Industrial drying 13010I12

Drying temperature

70°C

Washing powder

Detergent without brightener 13075N12

Reference

2023EP2120-S01

Test date

Start date

10/05/2023

End date

23/05/2023

| Dry mass of the samples (Kg) | Counterweight mass (Kg) | Counterweight type | Equipment |
|------------------------------|-------------------------|--------------------|---------------------------------------|
| 0.48 | 12 | COTTON / POLYESTER | INDUSTRIAL WASHING MACHINE 1 13009E12 |

| Reference | Description |
|----------------|-------------|
| 2023EP2120-S01 | XM-6011 |



Lucia Martinez
Head of PPE and Ballistics department



Date: 13/06/2023 9:31:14

Digitally Signed by: ISABEL LLOPIS LUMBRERAS -

NIF: 21678551Q

Liability clauses

- 1- AITEX is liable only for the results of the methods of analysis used, as expressed in the report and referring exclusively to the materials or samples indicated in the same which are in its possession, the professional and legal liability of the Centre being limited to these. Unless otherwise stated, the samples were freely chosen and sent by the applicant.
- 2- AITEX shall not be liable in any case of misuse of the test materials nor for undue interpretation or use of this document.
- 3- The Offer and / or Order to which the applicant gives approval through signature and seal, constitutes the Legally Executable Agreement in which AITEX is responsible for safeguarding and guaranteeing the absolute confidentiality of the management of all the information obtained or created during the performance of the contracted activities.
- 4- 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.
- 5- AITEX will provide at the request of the person concerned, the treatment of complaints procedure. In the event that you want to make it, direct it to: calidad@aitex.es.
- 6- AITEX is not responsible for the information provided by customers, which is reflected in the Report, and may affect the validity of the results.
- 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 uncertainties of the tests, which are made explicit in the Results Report, have been estimated for a $k = 2$ (probability of coverage of 95%). If not informed, they are available to the client 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- The client must attend at all times, to the dates of the realization of the tests.
- 13- According to Resolution EA (33) 31, the test reports must include the unique identification of the sample, and any brand or label of the manufacturer may be added. It is not allowed to re-issue test reports of untested sample names (references), they can only be re-issued for error correction or inclusion of omitted data that were already available at the time of the test. The laboratory can not assume responsibility for declaring that the product with the new trade name / trademark is strictly identical to the one originally tested; This responsibility belongs to the client.
- 14- AITEX is not responsible for an inadequate state of the sample received that could compromise the validity of the results, expressing such circumstance, in the test reports.
- 15- When a Declaration of Conformity is requested, if not indicated otherwise, the decision rule according to ILAC-G8: 2009 will be applied with a security zone of 1U and a Probability of False Acceptance <2.5%.
- 16- This report may not be partially reproduced without the written approval of the issuing laboratory.
- 17- AITEX laboratories do not carry out sampling, so that the results of the test reports are applicable to the sample as it was received.

TEST REPORT

2023EP2658

DATE OF RECEPTION

Date Format: dd/MM/yyyy 05/05/2023

DATE TESTS

Starting: 08/05/2023

Ending: 29/05/2023

APPLICANT

XM Textiles Europe UAB
Darius ir Gireno st. 42A Office 509
LT-02189 Vilnius
Lituania

Att. CERTIFICATION TEAM

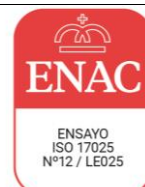
IDENTIFICATION AND DESCRIPTION OF SAMPLES

| Reference by AITEX | Reference by customer | AITEX sample description |
|--------------------|-----------------------|--------------------------|
| 2023EP1693-S01 | XM-6011 | Reflective tape |

TESTS CARRIED OUT

- DETERMINATION OF RETROREFLECTIVE PHOTOMETRIC PERFORMANCE.
- DETERMINATION OF ABRASION RESISTANCE PRETREATMENT.
- RESISTANCE TO FLEXING PRETREATMENT.
- EXPOSURE TO TEMPERATURE VARIATION.
- PRE-TREATMENT FOR INDUSTRIAL WASHING AND DRYING PROCEDURES FOR TEXTILE TESTING.
- PRE-TREATMENT OF DRY CLEANING.

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





DESCRIPTION OF SAMPLES



Reference by AITEX: 2023EP1693-S01

Reference by customer:

XM-6011

AITEX sample description:

Silver reflective tape.

Information supplied by the customer

Fabric ref. XM-6011

Composition and percentage 100% Cotton, N/A

Color Silver

Others (if any) 468

| AITEX Subsamples | Subsample Description |
|-------------------|---|
| 2023EP1693-S01_P1 | Tape -AFTER ABRASION |
| 2023EP1693-S01_P2 | Tape - AFTER FLEXION |
| 2023EP1693-S01_P3 | Tape - AFTER FOLDING AT COLD TEMPERATURES |
| 2023EP1693-S01_P4 | Tape - AFTER TEMPERATURE VARIATION |
| 2023EP1693-S01_P5 | Tape - AFTER RAINFALL EXPOSURE |
| 2023EP1693-S01_P7 | Tape - AFTER DRY CLEANING 30 cycles |



EXECUTIVE SUMMARY

| | Reference | Test/Standard | Result |
|--|-------------------|---|--------|
| EN ISO 20471:2013+EN ISO 20471:2013+AMD1:2016 | 2023EP1693-S01 | DETERMINATION OF RETROREFLECTIVE PHOTOMETRIC PERFORMANCE EN ISO 20471:2013+EN ISO 20471:2013+Amd1:2016 | PASS |
| | 2023EP1693-S01_P1 | DETERMINATION OF RETROREFLECTIVE PHOTOMETRIC PERFORMANCE EN ISO 20471:2013+EN ISO 20471:2013+Amd1:2016 | PASS |
| | 2023EP1693-S01_P2 | DETERMINATION OF RETROREFLECTIVE PHOTOMETRIC PERFORMANCE EN ISO 20471:2013+EN ISO 20471:2013+Amd1:2016 | PASS |
| | 2023EP1693-S01_P3 | DETERMINATION OF RETROREFLECTIVE PHOTOMETRIC PERFORMANCE EN ISO 20471:2013+EN ISO 20471:2013+Amd1:2016 | PASS |
| | 2023EP1693-S01_P4 | DETERMINATION OF RETROREFLECTIVE PHOTOMETRIC PERFORMANCE EN ISO 20471:2013+EN ISO 20471:2013+Amd1:2016 | PASS |
| | 2023EP1693-S01_P5 | DETERMINATION OF RETROREFLECTIVE PHOTOMETRIC PERFORMANCE EN ISO 20471:2013+EN ISO 20471:2013+Amd1:2016 | PASS |
| | 2023EP1693-S01_P7 | DETERMINATION OF RETROREFLECTIVE PHOTOMETRIC PERFORMANCE EN ISO 20471:2013+EN ISO 20471:2013+Amd1:2016 | PASS |



REQUIREMENT SUMMARY

DETERMINATION OF RETROREFLECTIVE PHOTOMETRIC PERFORMANCE

REQUIREMENT ACCORDING EN ISO 20471:2013+EN ISO 20471:2013+AMD1:2016

Minimum coefficient of retroreflection in $\text{cd}/(\text{lx m}^2)$ for separate performance retroreflective material according to section 6.1 of standard EN ISO 20471:2013/A1:2016

| Observation angle | Entrance angle | | | |
|-------------------|----------------|-----|-----|-----|
| | 5° | 20° | 30° | 40° |
| 12' | 330 | 290 | 180 | 65 |
| 20' | 250 | 200 | 170 | 60 |
| 1° | 25 | 15 | 12 | 10 |
| 01°30' | 10 | 7 | 5 | 4 |

DETERMINATION OF RETROREFLECTIVE PHOTOMETRIC PERFORMANCE

REQUIREMENT ACCORDING EN ISO 20471:2013+EN ISO 20471:2013+AMD1:2016

Minimum coefficient of retroreflection in $\text{cd}/(\text{lx m}^2)$ for separate performance retroreflective material according to section 6.2.2 of standard EN ISO 20471:2013/A1:2016

| Observation angle Entrance angle | Position | Requirement after pre-treatment |
|-------------------------------------|------------------------------------|---|
| 12' / 5° | $\epsilon_1 = 0^\circ$ vertical | $\geq 100 (\text{cd}/\text{lx}\cdot\text{m}^2)$ |
| 12' / 5° | $\epsilon_2 = 90^\circ$ horizontal | |



RESULTS

DETERMINATION OF RETROREFLECTIVE PHOTOMETRIC PERFORMANCE

Standard

EN ISO 20471:2013+EN ISO 20471:2013+Amd1:2016

Equipment

Optronik rms 10 retroreflectotemer 13320E06

Test date

| | | | |
|-------------------|------------|-----------------|------------|
| Start date | 08/05/2023 | End date | 24/05/2023 |
|-------------------|------------|-----------------|------------|

Light lamp

CIE standard Illuminant A

Measurement distance

A=15m

B=16m

To determine the retroreflection coefficient is considered

$\epsilon_1 = 0^\circ$ vertical retroreflective strips.

$\epsilon_2 = 90^\circ$ Horizontal retroreflective strips.

Variation between retroreflection coefficients

2.91 % No orientation-sensitive material



Reference

2023EP1693-S01

Sample size

100 cm²

Measurement distance

A

| Observation angle Entrance angle | Position | Result (cd/lx·m ²) |
|-------------------------------------|---------------------|--------------------------------|
| 12' / 5° | ε1 = 0° vertical | 464.1 |
| 12' / 5° | ε2 = 90° horizontal | 450.6 |

Results

Reference

2023EP1693-S01

| Observation angle | Position | Result (cd/lx·m ²) | | | |
|-------------------|---------------------|--------------------------------|-------|-------|-------|
| | | Entrance angle | | | |
| | | 5° | 20° | 30° | 40° |
| 12' | ε1 = 0° vertical | 464.1 | 530.3 | 532.5 | 430.3 |
| 20' | ε1 = 0° vertical | 317.1 | 348.5 | 349.1 | 308.5 |
| 1° | ε1 = 0° vertical | 49.36 | 43.34 | 47.17 | 41.07 |
| 1°30' | ε1 = 0° vertical | 20.05 | 13.51 | 17.52 | 21.7 |
| 12' | ε2 = 90° horizontal | 450.6 | 508.4 | 518.7 | 468.4 |
| 20' | ε2 = 90° horizontal | 295.3 | 333.7 | 338.6 | 320.9 |
| 1° | ε2 = 90° horizontal | 49.37 | 43.51 | 48.83 | 48.39 |
| 1°30' | ε2 = 90° horizontal | 19.53 | 14.17 | 18.84 | 20.63 |

Uncertainty

±2% of the value measured

Note

Minimum coefficient of retroreflection in cd/(lx m²) for separate performance retroreflective material according to section 6.1 of standard EN ISO 20471:2013/A1:2016

| Reference | Description |
|----------------|-------------|
| 2023EP1693-S01 | XM-6011 |



RESULTS

DETERMINATION OF ABRASION RESISTANCE PRETREATMENT

Standard

EN ISO 12947-2:2016

Equipment

Martindale Abrasion Tester

Atmosphere for conditioning**Temperature** (20 ± 2) °C**Relative Humidity** (65 ± 4) %**Test conditions**

Rubbing against SM-25 abrondant fabric

Type of fabric

Outside fabric

Test pressure

9 KPa

Reference

2023EP1693-S01

| Specimen | N° of cycles |
|----------|--------------|
| 1 | 5000 |
| 2 | 5000 |

| Reference | Description |
|----------------|-------------|
| 2023EP1693-S01 | XM-6011 |



RESULTS

DETERMINATION OF RETROREFLECTIVE PHOTOMETRIC PERFORMANCE

Standard

EN ISO 20471:2013+EN ISO 20471:2013+Amd1:2016

Equipment

Optronik rms 10 retroreflectotemer 13320E06

Test date

Start date 26/05/2023 End date 29/05/2023

Light lamp

CIE standard Illuminant A

Measurement distance

A=15m

B=16m

To determine the retroreflection coefficient is considered

$\epsilon_1 = 0^\circ$ vertical retroreflective strips.

$\epsilon_2 = 90^\circ$ Horizontal retroreflective strips.

Reference

2023EP1693-S01_P1

Sample size

100 cm²

Measurement distance

A

| Observation angle Entrance angle | Position | Result (cd/lx·m ²) |
|-------------------------------------|------------------------------------|--------------------------------|
| 12' / 5° | $\epsilon_1 = 0^\circ$ vertical | 452.1 |
| 12' / 5° | $\epsilon_2 = 90^\circ$ horizontal | 445.7 |

Uncertainty

±2% of the value measured

Note

Minimum coefficient of retroreflection in cd/(lx m²) for separate performance retroreflective material according to section 6.2.2 of standard EN ISO 20471:2013/A1:2016

| Reference | Description |
|-------------------|----------------------|
| 2023EP1693-S01_P1 | Tape -AFTER ABRASION |



RESULTS

RESISTANCE TO FLEXING PRETREATMENT

Standard

EN ISO 7854:1997 Mét.A

Reference

2023EP1693-S01

Test date
Start date

09/05/2023

End date

10/05/2023

| Specimens | Direction | Flex cycles |
|-----------|--------------------------|-------------|
| 2 | Lengthwise and Crosswise | 7500 |

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 |

| Reference | Description |
|----------------|-------------|
| 2023EP1693-S01 | XM-6011 |



RESULTS

DETERMINATION OF RETROREFLECTIVE PHOTOMETRIC PERFORMANCE

Standard

EN ISO 20471:2013+EN ISO 20471:2013+Amd1:2016

Equipment

Optronik rms 10 retroreflectometer 13320E06

Test date

Start date 22/05/2023 End date 24/05/2023

Light lamp

CIE standard Illuminant A

Measurement distance

A=15m

B=16m

To determine the retroreflection coefficient is considered

$\epsilon_1 = 0^\circ$ vertical retroreflective strips.

$\epsilon_2 = 90^\circ$ Horizontal retroreflective strips.

Reference

2023EP1693-S01_P2

Sample size

100 cm²

Measurement distance

A

| Observation angle Entrance angle | Position | Result (cd/lx·m ²) |
|-------------------------------------|------------------------------------|--------------------------------|
| 12' / 5° | $\epsilon_1 = 0^\circ$ vertical | 447.2 |
| 12' / 5° | $\epsilon_2 = 90^\circ$ horizontal | 441.2 |

Uncertainty

±2% of the value measured

Note

Minimum coefficient of retroreflection in cd/(lx m²) for separate performance retroreflective material according to section 6.2.2 of standard EN ISO 20471:2013/A1:2016

| Reference | Description |
|-------------------|---------------------|
| 2023EP1693-S01_P2 | Tape -AFTER FLEXION |



RESULTS

DETERMINATION OF RETROREFLECTIVE PHOTOMETRIC PERFORMANCE

Standard

EN ISO 20471:2013+EN ISO 20471:2013+Amd1:2016

Equipment

Optronik rms 10 retroreflectotemer 13320E06

Test date

Start date 22/05/2023 End date 24/05/2023

Light lamp

CIE standard Illuminant A

Measurement distance

A=15m

B=16m

To determine the retroreflection coefficient is considered

$\epsilon_1 = 0^\circ$ vertical retroreflective strips.

$\epsilon_2 = 90^\circ$ Horizontal retroreflective strips.

Reference

2023EP1693-S01_P3

Sample size

100 cm²

Measurement distance

A

| Observation angle Entrance angle | Position | Result (cd/lx·m ²) |
|-------------------------------------|------------------------------------|--------------------------------|
| 12' / 5° | $\epsilon_1 = 0^\circ$ vertical | 462.5 |
| 12' / 5° | $\epsilon_2 = 90^\circ$ horizontal | 458.7 |

Uncertainty

±2% of the value measured

Note

Minimum coefficient of retroreflection in cd/(lx m²) for separate performance retroreflective material according to section 6.2.2 of standard EN ISO 20471:2013/A1:2016

| Reference | Description |
|-------------------|--|
| 2023EP1693-S01_P3 | Tape -AFTER FOLDING AT COLD TEMPERATURES |



RESULTS

EXPOSURE TO TEMPERATURE VARIATION

Standard

EN ISO 20471:2013 point 7.4.4

Starting test date

19/05/2023

Ending test date

22/05/2023

Apparatus

Conditioning chamber

Number of specimens

1

Number of specimens rejected

0

Reference

2023EP1693-S01

Carrying out of the fitting out

Reflective strips are continuously exposed to a changing temperature cycle.

Results

- For 12 h at (50 ± 2) °C; immediately followed by
- 20 h at (-30 ± 2) °C
- Conditioned for at least 2 h in accordance with 7.1.: 24 h at (20 ± 2) °C and (65 ± 5) % relative humidity

| Reference | Description |
|----------------|-------------|
| 2023EP1693-S01 | XM-6011 |



RESULTS

DETERMINATION OF RETROREFLECTIVE PHOTOMETRIC PERFORMANCE

Standard

EN ISO 20471:2013+EN ISO 20471:2013+Amd1:2016

Equipment

Optronik rms 10 retroreflectotemer 13320E06

Test date

Start date 19/05/2023 **End date** 24/05/2023

Light lamp

CIE standard Illuminant A

Measurement distance

A=15m

B=16m

To determine the retroreflection coefficient is considered

$\epsilon_1 = 0^\circ$ vertical retroreflective strips.

$\epsilon_2 = 90^\circ$ Horizontal retroreflective strips.

Reference

2023EP1693-S01_P4

Sample size

100 cm²

Measurement distance

A

| Observation angle Entrance angle | Position | Result (cd/lx·m ²) |
|-------------------------------------|------------------------------------|--------------------------------|
| 12' / 5° | $\epsilon_1 = 0^\circ$ vertical | 463.3 |
| 12' / 5° | $\epsilon_2 = 90^\circ$ horizontal | 456.1 |

Uncertainty

±2% of the value measured

Note

Minimum coefficient of retroreflection in cd/(lx m²) for separate performance retroreflective material according to section 6.2.2 of standard EN ISO 20471:2013/A1:2016

| Reference | Description |
|-------------------|-----------------------------------|
| 2023EP1693-S01_P4 | Tape -AFTER TEMPERATURE VARIATION |



RESULTS

DETERMINATION OF RETROREFLECTIVE PHOTOMETRIC PERFORMANCE

Standard

EN ISO 20471:2013+EN ISO 20471:2013+Amd1:2016

Equipment

Optronik rms 10 retroreflectometer 13320E06

Test date

Start date 22/05/2023 End date 24/05/2023

Light lamp

CIE standard Illuminant A

Measurement distance

A=15m

B=16m

To determine the retroreflection coefficient is considered

$\epsilon_1 = 0^\circ$ vertical retroreflective strips.

$\epsilon_2 = 90^\circ$ Horizontal retroreflective strips.

Reference

2023EP1693-S01_P5

Sample size

100 cm²

Measurement distance

B

| Observation angle Entrance angle | Position | Result (cd/lx·m ²) |
|-------------------------------------|------------------------------------|--------------------------------|
| 12' / 5° | $\epsilon_1 = 0^\circ$ vertical | 383.8 |
| 12' / 5° | $\epsilon_2 = 90^\circ$ horizontal | 379.1 |

Uncertainty

±2% of the value measured

Note

Minimum coefficient of retroreflection in cd/(lx m²) for separate performance retroreflective material according to section 6.2.2 of standard EN ISO 20471:2013/A1:2016

| Reference | Description |
|-------------------|-------------------------------|
| 2023EP1693-S01_P1 | Tape -AFTER RAINFALL EXPOSURE |



RESULTS

PRE-TREATMENT OF DRY CLEANING

Standard

EN ISO 3175-2:2018

Equipment

Drying machine 13104N12

Scale 13003E03

Scale sartorius 04075IE03

Washing procedure

Normal

Reference

2023EP1693-S01

Test date**Start date**

09/05/2023

End date

17/05/2023

Washing cycles

30

| Reference | Description |
|----------------|-------------|
| 2023EP1693-S01 | XM-6011 |



RESULTS

DETERMINATION OF RETROREFLECTIVE PHOTOMETRIC PERFORMANCE

Standard

EN ISO 20471:2013+EN ISO 20471:2013+Amd1:2016

Equipment

Optronik rms 10 retroreflectometer 13320E06

Test date

Start date 22/05/2023 End date 24/05/2023

Light lamp

CIE standard Illuminant A

Measurement distance

A=15m

B=16m

To determine the retroreflection coefficient is considered

$\epsilon_1 = 0^\circ$ vertical retroreflective strips.

$\epsilon_2 = 90^\circ$ Horizontal retroreflective strips.

Reference

2023EP1693-S01_P7

Sample size

100 cm²

Measurement distance

A

| Observation angle Entrance angle | Position | Result (cd/lx·m ²) |
|-------------------------------------|------------------------------------|--------------------------------|
| 12' / 5° | $\epsilon_1 = 0^\circ$ vertical | 461.1 |
| 12' / 5° | $\epsilon_2 = 90^\circ$ horizontal | 455.9 |

Uncertainty

±2% of the value measured

Note

Minimum coefficient of retroreflection in cd/(lx m²) for separate performance retroreflective material according to section 6.2.2 of standard EN ISO 20471:2013/A1:2016

| Reference | Description |
|-------------------|------------------------------------|
| 2023EP1693-S01_P7 | Tape -AFTER DRY CLEANING 30 cycles |



Lucia Martinez
Head of PPE and Ballistics department



Date: 11/07/2023 13:45:01

Digitally Signed by: ISABEL LLOPIS LUMBRERAS -

NIF: 21678551Q

LIABILITY CLAUSES

- 1.- AITEX is liable only for the results of the methods of analysis used, as expressed in the report and referring exclusively to the materials or samples indicated in the same which are in its possession, the professional and legal liability of the Centre being limited to these. Unless otherwise stated, the samples were freely chosen and sent by the applicant.
- 2.- AITEX shall not be liable in any case of misuse of the test materials nor for undue interpretation or use of this document
- 3.- The Offer and / or Order to which the applicant gives approval through signature and seal, constitutes the Legally Executable Agreement in which AITEX is responsible for safeguarding and guaranteeing the absolute confidentiality of the management of all the information obtained or created during the performance of the contracted activities.
- 4.- 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.
- 5.- AITEX will provide at the request of the person concerned, the treatment of complaints procedure. In the event that you want to make it, direct it to: calidad@aitex.es.
- 6.- AITEX is not responsible for the information provided by customers, which is reflected in the Report, and may affect the validity of the results.
- 7.- AITEX is not responsible for an inadequate state of the sample received that could compromise the validity of the results, expressing such circumstance, in the test reports.
- 8.- AITEX may include in its reports, analyses, results, etc., any other evaluation which it considers necessary, even when it has not been specifically requested.
- 9.- When a Declaration of Conformity is requested, if not indicated otherwise, the decision rule according to ILAC-G8: 2009 will be applied with a security zone of 1U and a Probability of False Acceptance <2.5%.
- 10.- The uncertainties of tests, which are made explicit in the Results Report, have been estimated for a $k = 2$ (95% probability of coverage). If not informed, they are available to the client in AITEX.
11. - 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.
- 12.- This report may only be sent or delivered by hand to the applicant or to a person duly authorised by the same.
- 13.- 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.
- 14.- The client must attend at all times, to the dates of the realization of the tests.
- 15.- According to Resolution EA (33) 31, the test reports must include the unique identification of the sample, and any brand or label of the manufacturer may be added. It is not allowed to re-issue test reports of untested sample names (references), they can only be re-issued for error correction or inclusion of omitted data that were already available at the time of the test. The laboratory can not assume responsibility for declaring that the product with the new trade name / trademark is strictly identical to the one originally tested; This responsibility belongs to the client.
- 16.- This report may not be partially reproduced without the written approval of the issuing laboratory.
- 17.- AITEX laboratories do not carry out sampling, so that the results of the test reports are applicable to the sample as it was received.

2023EP3601

TEST REPORT

DATE OF RECEPTION

Date Format: dd/MM/yyyy 26/09/2023

DATE OF TESTS

Starting: 28/09/2023

Ending: 16/10/2023

APPLICANT

XM TEXTILES POLSKA SP. Z O. O.

16 WOLNOŚCIOWA

PL-95-200 Pabianice

Poland

Att Irina Danilova

REFERENCE OF SAMPLES

| Reference by AITEX | Reference by customer | AITEX sample description |
|--------------------|-----------------------|--------------------------|
| 2023EP3601-S01 | XM-6011 | Reflective tape |

TESTS CARRIED OUT

- PRE-TREATMENT FOR INDUSTRIAL WASHING AND DRYING PROCEDURES FOR TEXTILE TESTING
- DETERMINATION OF HEAT RESISTANCE 260°C

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





DESCRIPTION OF SAMPLES



Reference by AITEX: 2023EP3601-S01

Reference by customer:

XM-6011

AITEX sample description:

Silver reflective tape.

Information supplied by the customer

Fabric ref. XM-6011

Composition and percentage 100% Cotton, FR

Weight

Color Silver

Others (if any) 517

| AITEX Subsamples | Subsample Description |
|-------------------|-----------------------------|
| 2023EP3601-S01_P1 | Tape - AFTER WASH 50 cycles |



EXECUTIVE SUMMARY

| | Reference | Test/Standard | Result |
|----------------------------------|-------------------|---|--------|
| EN ISO 15384:2020/A1:202 1 | 2023EP3601-S01_P1 | DETERMINATION OF HEAT RESISTANCE 260°C ISO 17493:2016 | PASS |



REQUIREMENT SUMMARY

DETERMINATION OF HEAT RESISTANCE 260°C

REQUIREMENT ACCORDING EN ISO 15384:2020/A1:2021

Fabric

No layer can melt and/or drip.

At 260°C not layer shrink by more than 10%.

Not layer must ignite.

Hardware

No hardware/strip/seam shall ignite or melt

Closures opens



RESULTS

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

Standard

EN ISO 15797:2018

Washing procedure

Table 4, procedure 2

Washing cycles

50

Washing temperature

75°C

Drying procedure

A (tumble drying) - Industrial drying

Drying temperature

70°C

Washing powder

Detergent without brightener

Reference

2023EP3601-S01

Test date

Start date

28/09/2023

End date

06/10/2023

| Dry mass of the samples (Kg) | Counterweight mass (Kg) | Counterweight type | Equipment |
|------------------------------|-------------------------|--------------------|------------------------------|
| 0.09 | 12.5 | COTTON / POLYESTER | INDUSTRIAL WASHING MACHINE 2 |

The test was carried out at laboratory located at Carretera Banyeres s/n - 03802 Alcoi, Alicante

| Reference | Description |
|----------------|-------------------------|
| 2023EP3601-S01 | Silver reflective tape. |



RESULTS

DETERMINATION OF HEAT RESISTANCE 260°C

Standard

ISO 17493:2016

Equipment

Air stove

Test date

Start date 13/10/2023 **End date** 16/10/2023

Temperature

(260 ± 5)°C

Length of the test

5 min (+0,15/-0) min

Uncertainty

± 8 %

Reference

2023EP3601-S01_P1

| Ignition | Melting | Separation | Direction | Shrink(-) Elongation(+) |
|----------|---------|------------|------------|----------------------------|
| NO | NO | NO | Lengthwise | 0% |
| | | | Crosswise | 0% |

The test was carried out at laboratory located at Carretera Banyeres s/n - 03802 Alcoi, Alicante

| Reference | Description |
|-------------------|-----------------------------|
| 2023EP3601-S01_P1 | Tape - AFTER WASH 50 cycles |



Lucia Martinez
Head of PPE and Ballistics department



Date: 17/10/2023 10:20:20

Digitally Signed by: ISABEL LLOPIS LUMBRERAS -

NIF: 21678551Q

Liability clauses

- 1- AITEX is liable only for the results of the methods of analysis used, as expressed in the report and referring exclusively to the materials or samples indicated in the same which are in its possession, the professional and legal liability of the Centre being limited to these. Unless otherwise stated, the samples were freely chosen and sent by the applicant.
- 2- AITEX shall not be liable in any case of misuse of the test materials nor for undue interpretation or use of this document. AITEX laboratories do not carry out sampling.
- 3- The Offer and / or Order to which the applicant gives approval through signature and seal, constitutes the Legally Executable Agreement in which AITEX is responsible for safeguarding and guaranteeing the absolute confidentiality of the management of all the information obtained or created during the performance of the contracted activities.
- 4- 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.
- 5- AITEX will provide at the request of the person concerned, the treatment of complaints procedure. In the event that you want to make it, direct it to: calidad@aitex.es.
- 6- AITEX is not responsible for the information provided by customers, which is reflected in the Report, and may affect the validity of the results.
- 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 uncertainties of the tests, which are made explicit in the Results Report, have been estimated for a $k = 2$ (probability of coverage of 95%). If not informed, they are available to the client in AITEX.
- 9- 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.
- 10- 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.
- 11- This report may only be sent or delivered by hand to the applicant or to a person duly authorised by the same.
- 12- The client must attend at all times, to the dates of the realization of the tests.
- 13- According to Resolution EA (33) 31, the test reports must include the unique identification of the sample, and any brand or label of the manufacturer may be added. It is not allowed to re-issue test reports of untested sample names (references), they can only be re-issued for error correction or inclusion of omitted data that were already available at the time of the test. The laboratory can not assume responsibility for declaring that the product with the new trade name / trademark is strictly identical to the one originally tested; This responsibility belongs to the client.
- 14- AITEX is not responsible for an inadequate state of the sample received that could compromise the validity of the results, expressing such circumstance, in the test reports.
- 15- When a Declaration of Conformity is requested, if not indicated otherwise, the decision rule according to ILAC-G8: 2009 will be applied with a security zone of 1U and a Probability of False Acceptance <2.5%.
- 16- This report may not be partially reproduced without the written approval of the issuing laboratory.
- 17- The tests have been carried out at the Alcoy plant with the address described on the first page of the report, unless another location is indicated in the results sheet of the specific test.

| |
|-------------------|
| 2022EP7273 |
|-------------------|

TEST REPORT

DATE OF RECEPTION

Date Format: dd/MM/yyyy 09/05/2022

DATE OF TESTS

Starting : 16/05/2022

Ending: 07/06/2022

APPLICANT

XM Textiles Europe UAB

Darius ir Gireno st. 42A Office 509

LT-02189 Vilnius

Att CERTIFICATION TEAM

REFERENCE OF SAMPLES

| Reference by AITEX | Reference provided by the customer | Sample description |
|--------------------|------------------------------------|--------------------|
| 2022EP6899-S01 | Tape ref. XM-6011 | Reflective tape |

TESTS CARRIED OUT

- DETERMINATION OF RETROREFLECTIVE PHOTOMETRIC PERFORMANCE
- PRE-TREATMENT FOR INDUSTRIAL WASHING AND DRYING PROCEDURES FOR TEXTILE TESTING
- LIMITED FLAME SPREAD
- PRE-TREATMENT

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





DESCRIPTION OF SAMPLES



Reference by AITEX: 2022EP6899-S01

Reference provided by the customer:

Tape ref. XM-6011

Sample description:

Fabric ref. XM-6011

Composition and percentage 100% Cotton, N/A

Color Silver

Others (if any) 369

| Reference by AITEX | Reference provided by the customer |
|--------------------|------------------------------------|
| 2022EP6899-S01.1 | AFTER WASH |
| 2022EP6899-S01.2 | AFTER HEAT RESISTANCE |

**EXECUTIVE SUMMARY**

| | Sample | Test/Standard | Result |
|--------------------------------------|------------------|--|---------------|
| EN 469:2020 | 2022EP6899-S01.2 | DETERMINATION OF RETROREFLECTIVE PHOTOMETRIC PERFORMANCE EN ISO 20471:2013/A1:2016 | PASS |
| | 2022EP6899-S01.1 | FLAME SPREAD TEST EN ISO 15025:2016 Met.A | INDEX 3 |
| | Sample | Test/Standard | Result |
| EN ISO 20471:2013/A1:2016 | 2022EP6899-S01 | DETERMINATION OF RETROREFLECTIVE PHOTOMETRIC PERFORMANCE EN ISO 20471:2013/A1:2016 | PASS |



REQUIREMENT SUMMARY

DETERMINATION OF RETROREFLECTIVE PHOTOMETRIC PERFORMANCE

REQUIREMENT ACCORDING EN ISO 20471:2013/A1:2016

Minimum coefficient of retroreflection in $\text{cd}/(\text{lx m}^2)$ for separate performance retroreflective material according to section 6.1 of standard EN ISO 20471:2013/A1:2016

| Observation angle | Entrance angle | | | |
|-------------------|----------------|-----|-----|-----|
| | 5° | 20° | 30° | 40° |
| 12' | 330 | 290 | 180 | 65 |
| 20' | 250 | 200 | 170 | 60 |
| 1° | 25 | 15 | 12 | 10 |
| 01°30' | 10 | 7 | 5 | 4 |

LIMITED FLAME SPREAD

REQUIREMENT ACCORDING EN 469:2020

- No specimen shall permit any part of the lowest boundary of any flame to reach the upper or either vertical edge
- No specimen shall give flaming or molten debris
- The afterglow time of each sample shall be ≤ 2 s. Any afterglow shall not spread from the carbonised area to the undamaged area after the cessation of flaming.
- For Method A, no specimen shall give hole formation of 5 mm or greater in any direction.
- The after flame time of each sample shall be ≤ 2 s

DETERMINATION OF RETROREFLECTIVE PHOTOMETRIC PERFORMANCE

REQUIREMENT ACCORDING EN 469:2020

Minimum coefficient of retroreflection in $\text{cd}/(\text{lx m}^2)$ for separate performance retroreflective material according to section 6.2.2 of standard EN ISO 20471:2013/A1:2016

| Observation angle Entrance angle | Position | Requirement after pre-treatment |
|-------------------------------------|------------------------------------|---|
| 12' / 5° | $\epsilon_1 = 0^\circ$ vertical | ≥ 100 ($\text{cd}/\text{lx}\cdot\text{m}^2$) |
| 12' / 5° | $\epsilon_2 = 90^\circ$ horizontal | |



RESULTS

DETERMINATION OF RETROREFLECTIVE PHOTOMETRIC PERFORMANCE

Standard

EN ISO 20471:2013/A1:2016

Equipment

Optronik rms 10 retroreflectometer 13320E06

Test date

| | | | |
|-------------------|------------|-----------------|------------|
| Start date | 02/06/2022 | End date | 07/06/2022 |
|-------------------|------------|-----------------|------------|

Light lamp

CIE standard Illuminant A

Measurement distance

A=15m

B=16m

To determine the retroreflection coefficient is considered

$\epsilon_1 = 0^\circ$ vertical retroreflective strips.

$\epsilon_2 = 90^\circ$ Horizontal retroreflective strips.

Variation between retroreflection coefficients

0.12 % No orientation-sensitive material

**Reference**

2022EP6899-S01

Pre-treatment

Original

Sample size100 cm²**Measurement distance**

A

| Observation angle Entrance angle | Position | Result (cd/lx·m ²) |
|-------------------------------------|---------------------|--------------------------------|
| 12' / 5° | ε1 = 0° vertical | 535.6 |
| 12' / 5° | ε2 = 90° horizontal | 516 |

Results

2022EP6899-S01

| Observation angle | Position | Result (cd/lx·m ²) | | | |
|-------------------|---------------------|--------------------------------|-------|-------|-------|
| | | Entrance angle | | | |
| | | 5° | 20° | 30° | 40° |
| 12' | ε1 = 0° vertical | 535.6 | 445.7 | 374.5 | 318.6 |
| 20' | ε1 = 0° vertical | 338.8 | 284.8 | 236.9 | 214.3 |
| 1° | ε1 = 0° vertical | 60 | 70.98 | 75.92 | 51.59 |
| 1°30' | ε1 = 0° vertical | 18.09 | 16.79 | 21.67 | 28.97 |
| 12' | ε2 = 90° horizontal | 516 | 372 | 311 | 335.5 |
| 20' | ε2 = 90° horizontal | 318.7 | 247.7 | 205.1 | 225.6 |
| 1° | ε2 = 90° horizontal | 66.84 | 94.32 | 103.5 | 59.29 |
| 1°30' | ε2 = 90° horizontal | 15.18 | 20.87 | 26.3 | 30.65 |

Uncertainty

±2% of the value measured

Note

Minimum coefficient of retroreflection in cd/(lx m²) for separate performance retroreflective material according to section 6.1 of standard EN ISO 20471:2013/A1:2016



RESULTS

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

Standard

EN ISO 15797:2018

Washing procedure

Table 4, procedure 2

Washing cycles

60

Washing temperature

75°C

Driying procedure

A (tumble dryer) - Industrial dryer 13010I12

Driying temperature

70°C

Washing powder

Detergent without brightener 13075N12

Reference

2022EP6899-S01

Test date

Start date

18/05/2022

End date

31/05/2022

| Dry mass of the samples (Kg) | Counterweight mass (Kg) | Counterweight type | Equipment |
|------------------------------|-------------------------|--------------------|-----------------------------------|
| 0.2 | 12.3 | COTTON / POLYESTER | LAVADORA INDUSTRIAL 2 13073E12 |



RESULTS

LIMITED FLAME SPREAD

Standard

EN ISO 15025:2016 Met.A

Equipment

Equipment for determination of limited flame spread 13008IE12

Test date

Start date 01/06/2022 **End date** 07/06/2022

Conditioned date

Start date 1/6/2022 **End date** 7/6/2022

Conditioned

24h in indoor ambient conditions at (20 ± 2) °C and (65 ± 5) % RH

Gas used

Propane gas

Face exposed to the flame

Outer

| Reference | 2022EP6899-S01.1 | | |
|--|------------------|----|----|
| Flaming to top or either side edge | NO | NO | NO |
| Post- After flame (s) | 0 | 0 | 0 |
| Afterglow time (s) | 0 | 0 | 0 |
| Melting | NO | NO | NO |
| Loose waste | NO | NO | NO |
| Inflammation of the filter paper detached from waste | NO | NO | NO |
| Hole formation | NO | NO | NO |

Uncertainty

The uncertainty of the assay of limited flame spread is $\pm 2\%$ of the value measured



RESULTS

DETERMINATION OF RETROREFLECTIVE PHOTOMETRIC PERFORMANCE

Standard

EN ISO 20471:2013/A1:2016

Equipment

Optronik rms 10 retroreflectometer 13320E06

Test date

Start date 23/05/2022 **End date** 27/05/2022

Light lamp

CIE standard Illuminant A

Measurement distance

A=15m
B=16m

To determine the retroreflection coefficient is considered

$\epsilon_1 = 0^\circ$ vertical retroreflective strips.
 $\epsilon_2 = 90^\circ$ Horizontal retroreflective strips.

Variation between retroreflection coefficients

0.12 % No orientation-sensitive material

Reference

2022EP6899-S01.2

Pre-treatment

Heat resistance 180°C

Sample size

100 cm²

Measurement distance

A

| Observation angle Entrance angle | Position | Result (cd/lx·m ²) |
|-------------------------------------|------------------------------------|--------------------------------|
| 12' / 5° | $\epsilon_1 = 0^\circ$ vertical | 532.6 |
| 12' / 5° | $\epsilon_2 = 90^\circ$ horizontal | 522 |

Uncertainty

±2% of the value measured

Note

Minimum coefficient of retroreflection in cd/(lx m²) for separate performance retroreflective material according to section 6.2.2 of standard EN ISO 20471:2013/A1:2016



RESULTS

PRE-TREATMENT

Standard

ISO 17493:2016

Conditioned

24h in indoor ambient conditions at (20 ± 2) °C and (65 ± 5) % RH

Test date**Start date**

16/05/2022

End date

20/05/2022

Equipment

Air stove

Temperature

(180 ± 5) °C

Length of the test

300 s

Reference

2022EP6899-S01



Lucia Martinez
Head of PPE and Ballistics department



Date: 09/06/2022 11:15:31

Digitally Signed by: ISABEL LLOPIS LUMBRERAS -

NIF: 21678551Q

Liability clauses

- 1- AITEX is liable only for the results of the methods of analysis used, as expressed in the report and referring exclusively to the materials or samples indicated in the same which are in its possession, the professional and legal liability of the Centre being limited to these. Unless otherwise stated, the samples were freely chosen and sent by the applicant.
- 2- AITEX shall not be liable in any case of misuse of the test materials nor for undue interpretation or use of this document.
- 3- The Offer and / or Order to which the applicant gives approval through signature and seal, constitutes the Legally Executable Agreement in which AITEX is responsible for safeguarding and guaranteeing the absolute confidentiality of the management of all the information obtained or created during the performance of the contracted activities.
- 4- 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.
- 5- AITEX will provide at the request of the person concerned, the treatment of complaints procedure. In the event that you want to make it, direct it to: calidad@aitex.es.
- 6- AITEX is not responsible for the information provided by customers, which is reflected in the Report, and may affect the validity of the results.
- 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 uncertainties of the tests, which are made explicit in the Results Report, have been estimated for a $k = 2$ (probability of coverage of 95%). If not informed, they are available to the client 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- The client must attend at all times, to the dates of the realization of the tests.
- 13- According to Resolution EA (33) 31, the test reports must include the unique identification of the sample, and any brand or label of the manufacturer may be added. It is not allowed to re-issue test reports of untested sample names (references), they can only be re-issued for error correction or inclusion of omitted data that were already available at the time of the test. The laboratory can not assume responsibility for declaring that the product with the new trade name / trademark is strictly identical to the one originally tested; This responsibility belongs to the client.
- 14- AITEX is not responsible for an inadequate state of the sample received that could compromise the validity of the results, expressing such circumstance, in the test reports.
- 15- When a Declaration of Conformity is requested, if not indicated otherwise, the decision rule according to ILAC-G8: 2009 will be applied with a security zone of 1U and a Probability of False Acceptance <2.5%.
- 16- This report may not be partially reproduced without the written approval of the issuing laboratory.
- 17- AITEX laboratories do not carry out sampling, so that the results of the test reports are applicable to the sample as it was received.

2024EP1842

TEST REPORT

DATE OF RECEPTION

Date Format: dd/MM/yyyy 25/04/2024

DATE OF TESTS

Starting : 29/04/2024

Ending: 14/05/2024

APPLICANT

XM TEXTILES POLSKA SP. Z O. O.

16 WOLNOŚCIOWA

PL-95-200 Pabianice

Poland

Att Irina Danilova

REFERENCE OF SAMPLES

| Reference by AITEX | Reference by customer | AITEX sample description |
|--------------------|-----------------------|--------------------------|
| 2024EP1842-S01 | XM-6011 | Stripps |

TESTS CARRIED OUT

- PRE-TREATMENT FOR INDUSTRIAL WASHING AND DRYING PROCEDURES FOR TEXTILE TESTING
- LIMITED FLAME SPREAD
- DETERMINATION OF HEAT RESISTANCE 180°C

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





DESCRIPTION OF SAMPLES



Reference by AITEX: 2024EP1842-S01

Reference by customer:

XM-6011

Information supplied by the customer

- Composition and percentage 100% Cotton, FR
- Weight
- Color Silver
- Others (if any) 590

| AITEX Subsamples | Subsample Description |
|-------------------|--------------------------------------|
| 2024EP1842-S01_P1 | REFLECTIVE TAPE AFTER WASH 50 CYCLES |



EXECUTIVE SUMMARY

| | Reference | Test/Standard | Result |
|-------------------|-------------------|---|--------|
| EN ISO 11612:2015 | 2024EP1842-S01_P1 | DETERMINATION OF HEAT RESISTANCE 180°C ISO 17493:2016 | PASS |
| | 2024EP1842-S01_P1 | LIMITED FLAME SPREAD EN ISO 15025:2016 Met.A | A1 |



REQUIREMENT SUMMARY

LIMITED FLAME SPREAD

REQUIREMENT ACCORDING EN ISO 11612:2015

- No specimen shall permit any part of the lowest boundary of any flame to reach the upper or either vertical edge
- No specimen shall give flaming or molten debris
- The afterglow time of each sample shall be ≤ 2 s. Any afterglow shall not spread from the carbonised area to the undamaged area after the cessation of flaming.
- For Method A, no specimen shall give hole formation of 5 mm or greater in any direction.
- The after flame time of each sample shall be ≤ 2 s

DETERMINATION OF HEAT RESISTANCE 180°C

REQUIREMENT ACCORDING EN ISO 11612:2015

Fabric

No layer can melt and/or drip.

At 180°C not layer shrink by more than 5%.

Not layer must ignite.

Hardware

No hardware/strip/seam shall ignite or melt

Closures opens



RESULTS

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

Standard

EN ISO 15797:2018

Washing procedure

Table 4, procedure 2

Washing cycles

50

Washing temperature

75°C

Drying procedure

A (tumble drying) - Industrial drying

Drying temperature

70°C

Washing powder

Detergent without brightener

Reference

2024EP1842-S01

Test date

Start date

02/05/2024

End date

09/05/2024

| Dry mass of the samples (Kg) | Counterweight mass (Kg) | Counterweight type | Equipment |
|------------------------------|-------------------------|--------------------|------------------------------|
| 0.11 | 12.5 | COTTON / POLYESTER | INDUSTRIAL WASHING MACHINE 5 |

The test was carried out at laboratory located at Carretera Banyeres s/n - 03802 Alcoi, Alicante

| Reference | Description |
|----------------|-------------|
| 2024EP1842-S01 | XM-6011 |



RESULTS

LIMITED FLAME SPREAD

Standard

EN ISO 15025:2016 Met.A

Equipment

Equipment for determination of limited flame spread

Test date

| | | | |
|-------------------|------------|-----------------|------------|
| Start date | 29/04/2024 | End date | 14/05/2024 |
|-------------------|------------|-----------------|------------|

Conditioned date

| | | | |
|-------------------|------------|-----------------|------------|
| Start date | 30/04/2024 | End date | 09/05/2024 |
|-------------------|------------|-----------------|------------|

Conditioned

24h in indoor ambient conditions at (20 ± 2) °C and (65 ± 5) % RH

Gas used

Propane gas

Face exposed to the flame

Outer



Reference

2024EP1842-S01

Atmosphere for testing

Temperature 21.3 °C Relative Humidity 46.1 %

| | NO | NO | NO |
|--|-----|-----|-----|
| Flaming to top or either side edge | NO | NO | NO |
| Post- After flame (s) | 0 | 0 | 0 |
| Afterglow time (s) | 0 | 0 | 0 |
| Melting | NO | NO | NO |
| Loose waste | NO | NO | NO |
| Inflammation of the filter paper detached from waste | NO | NO | NO |
| Hole formation | NO | NO | NO |
| Closures can be opened | --- | --- | --- |

Reference

2024EP1842-S01_P1

Atmosphere for testing

Temperature 21.8 °C Relative Humidity 34.2 %

| | NO | NO | NO |
|--|-----|-----|-----|
| Flaming to top or either side edge | NO | NO | NO |
| Post- After flame (s) | 0 | 0 | 0 |
| Afterglow time (s) | 0 | 0 | 0 |
| Melting | NO | NO | NO |
| Loose waste | NO | NO | NO |
| Inflammation of the filter paper detached from waste | NO | NO | NO |
| Hole formation | NO | NO | NO |
| Closures can be opened | --- | --- | --- |

Uncertainty

The uncertainty of the assay of limited flame spread is $\pm 2\%$ of the value measured

The test was carried out at laboratory located at Carretera Banyeres s/n - 03802 Alcoi, Alicante

| Reference | Description |
|-------------------|--------------------------------------|
| 2024EP1842-S01 | XM-6011 |
| 2024EP1842-S01_P1 | REFLECTIVE TAPE AFTER WASH 50 CYCLES |



RESULTS

DETERMINATION OF HEAT RESISTANCE 180°C

Standard

ISO 17493:2016

Equipment

Air stove

Test date

Start date 09/05/2024 **End date** 13/05/2024

Temperature

(180 ± 5)°C

Length of the test

5 min (+0,15/-0) min

Uncertainty

± 1 %

Reference

2024EP1842-S01_P1

| Ignition | Melting | Separation | Hardware work correctly |
|----------|---------|------------|-------------------------|
| NO | NO | NO | --- |

The test was carried out at laboratory located at Carretera Banyeres s/n - 03802 Alcoi, Alicante

| Reference | Description |
|-------------------|--------------------------------------|
| 2024EP1842-S01_P1 | REFLECTIVE TAPE AFTER WASH 50 CYCLES |



Lucia Martinez
Head of PPE and Ballistics department



Date: 17/05/2024 9:08:07

Digitally Signed by: ISABEL LLOPIS LUMBRERAS -

NIF: 21678551Q

Liability clauses

- 1- AITEX is liable only for the results of the methods of analysis used, as expressed in the report and referring exclusively to the materials or samples indicated in the same which are in its possession, the professional and legal liability of the Centre being limited to these. Unless otherwise stated, the samples were freely chosen and sent by the applicant.
- 2- AITEX shall not be liable in any case of misuse of the test materials nor for undue interpretation or use of this document. AITEX laboratories do not carry out sampling.
- 3- The Offer and / or Order to which the applicant gives approval through signature and seal, constitutes the Legally Executable Agreement in which AITEX is responsible for safeguarding and guaranteeing the absolute confidentiality of the management of all the information obtained or created during the performance of the contracted activities.
- 4- 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.
- 5- AITEX will provide at the request of the person concerned, the treatment of complaints procedure. In the event that you want to make it, direct it to: calidad@aitex.es.
- 6- AITEX is not responsible for the information provided by customers, which is reflected in the Report, and may affect the validity of the results.
- 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 uncertainties of the tests, which are made explicit in the Results Report, have been estimated for a $k = 2$ (probability of coverage of 95%). If not informed, they are available to the client in AITEX.
- 9- 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.
- 10- 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.
- 11- This report may only be sent or delivered by hand to the applicant or to a person duly authorised by the same.
- 12- The client must attend at all times, to the dates of the realization of the tests.
- 13- According to Resolution EA (33) 31, the test reports must include the unique identification of the sample, and any brand or label of the manufacturer may be added. It is not allowed to re-issue test reports of untested sample names (references), they can only be re-issued for error correction or inclusion of omitted data that were already available at the time of the test. The laboratory can not assume responsibility for declaring that the product with the new trade name / trademark is strictly identical to the one originally tested; This responsibility belongs to the client.
- 14- AITEX is not responsible for an inadequate state of the sample received that could compromise the validity of the results, expressing such circumstance, in the test reports.
- 15- When a Declaration of Conformity is requested, if not indicated otherwise, the decision rule according to ILAC-G8: 2009 will be applied with a security zone of 1U and a Probability of False Acceptance <2.5%.
- 16- This report may not be partially reproduced without the written approval of the issuing laboratory.
- 17- The tests have been carried out at the Alcoy plant with the address described on the first page of the report, unless another location is indicated in the results sheet of the specific test.