

## TEST REPORT

**2019CN0455**

### DATE OF RECEPTION

01/07/2019

### DATE TESTS

Starting: 02/07/2019

Ending: 24/07/2019

### APPLICANT

Shanghai XM Group LTD  
Room 2403,88 Guangxin Road  
CN-200063 SHANGHAI

### IDENTIFICATION AND DESCRIPTION OF SAMPLES

#### REFERENCES

FABRIC POSEIDON 245

According to information supplied by the customer:

- Fabric reference: POSEIDON-245
- Composition and percentage: 80% Cotton, 19% Polyester and 1% Antistatic
- Weight: 245 g/m<sup>2</sup>
- Color: Royal Blue

### TESTS CARRIED OUT

- 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.
- DETERMINATION OF BREAKING STRENGTH AND ELONGATION.
- WATER VAPOUR RESISTANCE.
- MEANING OF COLOUR FASTNESS APPRAISAL EVALUATED WITH GREY SCALE.

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



## RESULTS

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

**Standard**

ISO 6330:2012

**Standard deviation**

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**Reference**

Sample1 FABRIC POSEIDON 245

**Units**

1

**Equipment**

Wascator 13471E05

**Dryer machine**

JAMES HEAL

13473E05

**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	0,13 Kg	1,90 Kg of Polyester	Wascator 13471E05

**Start and finish date**

09/07/2019 - 10/07/2019

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## RESULTS

### COLOUR FASTNESS TO RUBBING

**Standard**

ISO 105-X12:2016

**Apparatus**

Crockmeter

**Starting test date**

08/07/2019

**Ending test date**

22/07/2019

**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

REFERENCE	DIRECTION	DRY STAINING
FABRIC POSEIDON 245	Warp	4-5
	Weft	4-5

**REQUISITE**

The limit set by the Standard EN ISO 20471:2013/A1:2016 for colour fastness to rubbing, is 4, in dry rubbing.

<b>PASS</b>
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## RESULTS

### COLOUR FASTNESS TO PERSPIRATION

**Standard**

EN ISO 105-E04:2013

**Apparatus**

Perspirometer

**ALKALINE SOLUTION**

Aparatus Code 02022104 (sweat basic)

REFERENCE	FABRIC POSEIDON 245	
CHANGE IN COLOUR	STAINING	
5	Cotton	Polyester
	4-5	4-5

**ACID SOLUTION**

Aparatus Code 02054104 (sweat acid)

REFERENCE	FABRIC POSEIDON 245	
CHANGE IN COLOUR	STAINING	
5	Cotton	Polyester
	4-5	4-5

**REQUISITE**

The limit set by the Standard EN ISO 20471:2013/A1:2016 for testing of colour fastness to perspiration, is 4 for degradation and 4 for staining

**PASS**

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## RESULTS

### COLOUR FASTNESS TO DOMESTIC AND COMMERCIAL LAUNDERING

**Standard**

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 POSEIDON 245	4-5	Cotton Polyester 4-5 4-5

**REQUISITE**

The limit set by the Standard EN ISO 20471:2013/A1:2016 for testing of colour fastness to washing is 4 for staining.

**PASS**

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## RESULTS

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

**Standard**

EN ISO 5077:2008

**Standard deviation**

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

<b>Starting test date</b>	08/07/2019	<b>Ending test date</b>	16/07/2019
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**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 (13471E05)

**Detergent**

98 ECE reference detergent without optical brightener.

**Counterweight**

Type III - 100% polyester

**Number of washing cycles**

5

**Dryer type**

A3

**Procedure F – Tumble dry (13473E05)****Uncertainty of test (% of the measured value)** $\pm 15 \%$ **Tested material**

Blue knitted fabric

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## RESULTS

Reference	Specimen	Direction	Dimensional change (%)	Direction	Average result - Dimensional change (%)
FABRIC POSEIDON 245	1	Lengthwise	-0,7	Lengthwise	-1,0
		Crosswise	-1,0		
	2	Lengthwise	-1,0	Crosswise	-1,0
		Crosswise	-0,8		

### REMARK

Negative dimensional change indicates shrinkage  
Positive dimensional change indicates lengthening

### REQUISITE

In accordance with the Standard EN ISO 20471:2013/A1:2016, the dimensional change of knitted fabrics shall not exceed  $\pm 5\%$ , both in width Crosswise and in length Lengthwise.

**PASS**

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## RESULTS

### DETERMINATION OF BREAKING STRENGTH AND ELONGATION

**Standard**

EN ISO 13934-1:2013

**Apparatus**

INSTRON Dynamometer

**Conditioning date**

08/07/2019 – 12/07/2019

**Test date**

12/07/2019

**Gauge length**

200 mm.

**Test velocity**

100 mm/min

**Pretension**
**Warp**

2 N

**Weft**

2 N

**Atmosphere for conditioning and testing**
**temperature**

(20±2) °C

**Relative humidity**

(65±4) %

**N° of specimens**
**Tested**

5 for each direction

**Rejected**

0

**State of the specimens**

Conditioned

Reference	FABRIC POSEIDON 245			
Direction	Average load (N)	CV (%)	Elongation to the maximum load (%)	CV (%)
<b>Warp</b>	1400	4.0	12.0	7.0
	1300		11.0	
	1300 <b>1300</b>		10.5 <b>11.5</b>	
	1300		11.0	
	1400		12.5	
<b>Weft</b>	590	3.0	19.5	4.0
	580		19.0	
	580 <b>580</b>		19.5 <b>19.5</b>	
	550		21.0	
	590		19.5	

**Remark**

The relative expanded uncertainty of Tensile strength resistance is ±5% assay value of the measured, for a probability of coverage of 95%.

**REQUISITE ACCORDING TO STANDARD EN ISO 20471:2013 +A1:2016 POINT 5.5.1**

The tensile strength of woven fabrics must resist a breaking load in both directions ≥ 100 N.

<b>PASS</b>
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## RESULTS

### WATER VAPOUR RESISTANCE

**Standard**

EN ISO 11092:2014

**Test date**

23/7/2019

**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**

Navy blue woven 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 $R_{et}$ ( $m^2Pa/W$ )
Fabric POSEIDON 245	Specimen 1	4,78
	Specimen 2	4,63
	Specimen 3	4,74
	Average	4,72

According requirement of EN ISO 20471:2013+EN ISO 20471:2013/A1:2016 standard, water vapour resistance shall not be higher than  $5 m^2 Pa/W$ .

**PASS**



## RESULTS

### MEANING OF COLOUR FASTNESS APPRAISAL EVALUATED WITH GREY SCALE

VALUE	MEANING
5	VERY GOOD-EXCELLENT
4	GOOD
3	FAIR-MODERATE
2	POOR BEHAVIOUR
1	VERY POOR

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