




# Fortis-235

65% POLYESTER / 35% COTTON

235 GSM / RIP-STOP



Fabric name	Fortis-235
Fabric weight	235 ± 5 gsm
Composition	65% Polyester, 35% Cotton
Full width	150 ± 2 cm
Weave	Rip-stop
Finishes	—
Area of use	workwear jackets, trousers and overalls
Washing instruction	

## Physical properties\*

			warp	weft
1	Tensile strength, N	ISO 13934-1:2013	1400	600
2	Tearing strength, N	ISO 13937-3:2000	41	34
3	Dimensional Stability To Washing, max.	ISO 6330:2000	3.0%	3.0%
4	Abrasion Resistance	ISO 12947-2:2002	> 20 000	
5	Pilling Resistance (after 1000 rev.)	ISO 12945-2:2000	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	4	
7	Colour Fastness To Perspiration, min.	ISO 105-E04:2013		
	Colour change		4-5	
	Colour staining		4-5	
8	Colour Fastness To Rubbing, min.	ISO 105-X12:2001		
	Dry		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](http://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](mailto:info@xmtextiles.com)

### XM TEXTILES ROMANIA

Sos. Tamasi 20, Hala 6B, Parter,  
Buftea, 070000, Ilfov, Romania  
Tel. +40 31 630 3639  
[info@xmtextiles.com](mailto: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](mailto:info@xmtextiles.com)

SHANGHIA XM GROUP LTD  
ROOM 2403, ZHONGYI INTERNATIONAL BUILDING, NO.1833, ZHONGSHAN NORTH ROAD, SHANGHAI

The following sample(s) was/were submitted and identified on behalf of the client as:

Sample Description : (A)Woven fabric (FORTIS-235 poly65%/ctn35% 3-line rib-stop 150cm 235GSM  
Order: XM-23-354-NO)

Sample Color : (A)Dark navy #22

Proposed Care Instruction :



Test Performed : Selected test(s) as requested by applicant

Sample Receiving Date : Jan 09, 2024

Testing Period : Jan 09, 2024 - Jan 16, 2024

Test Result(s) : Unless otherwise stated the results shown in this test report refer only to the sample(s) tested, for further details, please refer to the following page(s).

Signed for and on behalf of  
SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd

Sara Guo (Account Executive)



Test Result

**Dimensional Stability To Washing**

(ISO 3759:2011/ISO 5077:2007/ISO 6330:2021; Using horizontal axis, front-loading type machine; Procedure No.6N, Machine Wash At 60°C; with 2.0±0.2kg total dry mass (Type III (100% Polyester) Ballast+ Specimen) and 20±1 g ECE reference detergent 98 without optical brightener, Tumble Dry Low, Not Exceeding 60°C.)

After 1 Wash

-	Unit	A
Lengthwise	%	-2.9
Widthwise	%	-0.6

Remark: (+) Means Growth; (-) Means Shrinkage

**Colour Fastness To Washing**

(ISO 105-C06:2010; Test No.: C2S, Machine wash at 60°C with 4g/L ECE (B) and 1g/L Sodium Perborate with 25 Steel Balls)

-	Unit	A
Change in Shade	Grade	4-5
Staining On Multi-fibre Stripe		
Triacetate	Grade	4
Cotton	Grade	4-5
Polyamide	Grade	2-3
Polyester	Grade	4
Acrylic	Grade	4-5
Viscose	Grade	4-5

Remark: Grey Scale Rating is based on the 5-step scale of 1 to 5, where 1 is worst and 5 is best.

**Colour Fastness To Rubbing**

(ISO 105-X12:2016; Size of rubbing finger: 16mm dia.)

As Received

-	Unit	A
Dry Staining	Grade	4-5
Wet Staining	Grade	2-3

Remark: Grey Scale Rating is based on the 5-step scale of 1 to 5, where 1 is worst and 5 is best.



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**Colour Fastness To Perspiration**

(ISO 105-E04:2013; Test specimen in vertical position)

Acid

-	Unit	A
Change in Shade	Grade	4-5
Staining On Multi-fibre Stripe		
Acetate	Grade	4-5
Cotton	Grade	4-5
Polyamide	Grade	4-5
Polyester	Grade	4-5
Acrylic	Grade	4-5
Wool	Grade	4-5

Alkaline

-	Unit	A
Change in Shade	Grade	4-5
Staining On Multi-fibre Stripe		
Acetate	Grade	4-5
Cotton	Grade	4-5
Polyamide	Grade	4-5
Polyester	Grade	4-5
Acrylic	Grade	4-5
Wool	Grade	4-5

Remark: Grey Scale Rating is based on the 5-step scale of 1 to 5, where 1 is worst and 5 is best.

**Colour Fastness To Light**

(ISO 105-B02:2014; Method 2 (Modified), use Xenon arc lamp, Exposure Cycle: A1, no flip-flop mode was used)

Comparison up to blue wool reference 4

-	Unit	A
Grade(B.W.S)	-	4

**Tearing Strength**

(ISO 13937-3:2000)

As Received

-	Unit	A
Warp/Length Yarns Torn	N	41
Weft/Width Yarns Torn	N	34



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SGS-CSTC (Shanghai) Technical Services Co., Ltd.  
Softline Laboratory

3<sup>rd</sup> Building, No. 889, Yishan Road, Xuhui District Shanghai, China 200233  
中国·上海·徐汇区宜山路889号3号楼 邮编: 200233

t (86-21) 61402666 f (86-21) 64958763  
t (86-21) 61402666 f (86-21) 64958763

www.sgsgroup.com.cn  
sgs.china@sgs.com

**Abrasion Resistance**

(BS EN ISO 12947-2:2016; Martindale Abrasion & Pilling Tester, Pressure: 12kPa)

As Received

	Unit	A
-		
The quoted result	Rubs	23000

**Fabric Propensity to Surface Pilling, Fuzzing or Matting: Modified Martindale Method**

(BS EN ISO 12945-2:2020; Martindale Abrasion & Pilling Tester, Total load applied 415g)

As Received

After 125 Revolutions

	Unit	A
-		
Pilling Rating	-	4-5
Fuzzing Rating	-	4
Matting Rating	-	N/A

After 500 Revolutions

	Unit	A
-		
Pilling Rating	-	4
Fuzzing Rating	-	4
Matting Rating	-	N/A

After 1000 Revolutions

	Unit	A
-		
Pilling Rating	-	4
Fuzzing Rating	-	4
Matting Rating	-	N/A

After 2000 Revolutions

	Unit	A
-		
Pilling Rating	-	4
Fuzzing Rating	-	4
Matting Rating	-	N/A

Remarks:

Grade Pilling Description

- 5 No change
- 4 Partially formed pills
- 3 Moderate pilling — pills of varying size and density partially covering the specimen surface
- 2 Distinct pilling — pills of varying size and density covering a large proportion of the specimen surface
- 1 Severe pilling — pills of varying size and density covering the whole of the specimen surface

Grade Fuzzing Description

- 5 No change



- 4 Slight surface fuzzing
- 3 Moderate surface fuzzing
- 2 Distinct surface fuzzing
- 1 Dense surface fuzzing

Grade	Matting	Description
5	No change	
4	Slight surface matting	
3	Moderate surface matting	
2	Distinct surface matting	
1	Dense surface matting	

**Tensile Strength**

(EN ISO 13934-1:2013; Strip method)

As Received

-	Unit	<b>A</b>
Warp/Length	N	1400
Weft/Width	N	610

**Sample Photo**



\*\*\*End of Report\*\*\*



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