

ENG | VOL.68

Flame Retardant fabrics for FR-Clothing







WHY CHOOSE OUR FR-FABRICS?



XM FireLine[™] designs and manufactures Flame Retardant fabrics for protective and fr-clothing.

We have 15 years experience of work with protective clothing and today we sell our fr-fabrics on 6 continents in 51 countries. XM FireLine[™] represented by offices in Asia (in Shanghai), Europe (Lithuania, Romania, Spain, Portugal, Poland and Russia) and South America

(Sao-Paulo).



We have 18 different flame retardant fabrics in our product range and 12 of them we have always in stock in 6 main shades. Other 6 fr-fabrics we make per order.



All our FR-fabrics resist 50/100 wash cycles and certified to ISO 11612. Some of our fabrics are also certified to EN 1149-5 for antistatic properties. We test every production lot to deliver you 100% guality.

SAFETY & PROTECTION



XMF flame retardant fabrics protect against Heat & Flame. FR-clothing made of our fr-fabrics increases safety of workers due to proven quality, confirmed by certification in BTTG (UK), AITEX (Spain).

QUALITY



XMF flame retardant fabrics are made with high grade combed cotton for softness and durability. We use double FR-treatment (THPC) to guarantee FR properties last 50-100 washes. Antistatic properties are provided by Belltron (Japan) antistatic carbon yarn and we use VAT dyes to have CF to washing 4-5. Every batch of XM FireLine fabrics is tested for Flame Resistance after 50 washes.

ECO-FRIENDLY



XMF flame retardant fabrics are OEKO-TEX 100 certified. That means our fabrics consists no harmful substances and ecologically friendly to the wearers. We renew the certificate OEKO-TEX every year, since it is valid for only 12 months. XMF fabrics are also continuously tested for Formaldehyde content and the tests always confirm that our fabrics are ECO-friendly.

FR-STANDARDS



XMF flame retardant fabrics are tested according to the requirements of European ISO system and also to the American NFPA standards. The reason is simple - we have clients all over the world and we must comply to different international standards. XMF fabrics have been tested more rigorously and have maximum compliance to FR-standards.

FLAME RESISTANCE AFTER 100 WASHES



XMF fabrics (8 fabrics) have been tested in AITEX lab (Spain) for flame resistant properties after 100 wash cycles. The fr-fabrics undergone industrial laundry at 75°C for 100 washes according to ISO 15797. After that Limited Flame Spread test has been done by ISO 15025. No After-flame or After-glow has been observed.

CERTIFICATES

XMF flame retardant fabrics are certified to the following standards: ISO 11611, ISO 11612, EN ISO 1149, EN 13034, EN 61482-1-2, EN 469, EN 20471, EN 14116, etc.

The certificates have been obtained in international laboratories and available for download on our website

www.XMFireLine.com



XMFireLine

OUR FR-FABRIC RANGE



#	PAGE	WEIGHT GSM	FABRIC	DESCRIPTION	USABLE WIDTH/ CM	EN ISO 11612	EN ISO 11611	EN ISO 1149-5	EN ISO 13034	EN 61482-1-1	EN 61482-1-2
1	4	480	GEFEST-480	100% COTTON • SATIN 5/2 • FR	150						
2	6	420	GEFEST-420	100% COTTON • SATIN 4/1 • FR	150					16.1 CAL/CM ²	
3	8	350	COLOMBO AS	99% COTTON • 1% AS • TWILL 2/2 • FR	150			1149-3	*	9.2 CAL/CM ²	CLASS 1 (4 KA)
4	10	350	ETNA	99% COTTON • 1% AS • SATIN 4/1 • FR	150			1149-3		9.3 CAL/CM ²	CLASS 1 (4 KA)
5	12	330	CORFU-330	99% COTTON • 1% AS • TWILL 3/1 • FR	150			1149-3			CLASS 1 (4 KA)
6	14	320	MADEIRA-320	100% COTTON • TWILL 3/1 • FR	150						
7	16	260	MADEIRA-260	100% COTTON • TWILL 3/1 • FR	150						
8	18	220	FIJI	99% COTTON • 1% AS • TWILL 2/1 • FR	150			1149-3		8.6 CAL/CM ²	
9	20	300	POSEIDON-300	80% COTTON • 19% POLYESTER • 1% AS • TWILL 2/2 • FR • MULTI-RISK	150			1149-3		9.6 CAL/CM ²	CLASS 1 (4 KA)
10	22	245	POSEIDON-245	80% COTTON • 19% POLYESTER • 1% AS • TWILL 2/2 • FR • MULTI-RISK	150			1149-3		10.0 CAL/CM ²	CLASS 1 (4 KA)
11	24	185	SONORA/ SONORA AS	80% COTTON • 20% POLYESTER • PLAIN 1/1 • FR	150			1149-3			
12	26	260	VOLCANO	87% COTTON • 12% NYLON • 1% AS • SATIN 4/1 • FR • MULTI-RISK	150			1149-3		12 CAL/CM ²	CLASS 1 (4 KA)
13	28	160	FR-LINING-160	100% COTTON • PLAIN 1/1 • FR	150	EN 14116					
14	30	120	ARAVIS-120	50% M-ARAMID • 50% FR VISCOSE • PLAIN 1/1 • FR	150						
15	32	210	ARTEX-210	93% M-ARAMID • 5% P-ARAMID • 2% AS • TWILL 2/1 • FR	150			1149-3			
16	34	250	MURANO-250	60% MODACRYLIC • 35% COTTON • 4% N • 1% AS • RIP-STOP • FR • MULTI-RISK	150			1149-3		6.9 CAL/CM ²	
17	36	280	FR-FLEECE-280	60% MODACRYLIC • 39% COTTON • 1% AS • KNITTED FABRIC • FR	150			1149-3			
18	38	200	FR-JERSEY-200C	60% MODACRYLIC • 38% COTTON • 2% AS • KNITTED FABRIC • FR	155			1149-3			CLASS 1 (4 KA)
19	40	230	FR-PIQUE-230	60% MODACRYLIC • 38% COTTON • 2% AS • KNITTED FABRIC • FR	165			1149-3		8 CAL/CM ²	
20	42	250	FR-OXFORD-250	98% POLYESTER • 2% AS • PLAIN 1/1 • FR	150	EN 14116		1149-3	EN 343		

(*) - optional treatment, make per order

MULTI-RISK finish conforms to EN ISO 13034 standard and adds resistance to such substances as Water, Oil, some Acids and Alkali. We have ALL the Certificates mentioned in the table above on our web-site to view or download in open access (no registration required). AITEX (SPAIN), BTTG (UK), KINECTRICS (CANADA) ARE TESTING LABORATORIES WHERE WE TEST AND CERTIFY XM FIRELINE FABRICS.



3





100% COTTON , 480 GSM, SATIN 5/2

FLAME RETARDANT

COTTON FABRIC | WELDING

Flame retardant fabric Gefest-480 is designed for welders working on open sea oil-platforms, in dry docks or in naval shipyards. Gefest-480 protective fabric is also used for welding jackets and trousers in machinery, metallurgy, oil and gas pipeline construction, automotive industry, etc.

The specific feature of Gefest-480 is it's fantastic tear and tensile strength. The fabric is so strong that it's impossible to tear it with bare hands. High durability of the fabric is achieved thought the use of long staple cotton fibers which are twisted into the warp and weft. Such durability increases the life circle of welder's clothing. Moreover, satin weave makes molten metal drops slide off of the smooth surface instead of sticking to it what prevents fabric from ignition. Gefest-480 is a soft fabric which makes comfortable garments and provides protection from Heat and Flame (ISO 11611 & ISO 11612 certified).

100 x wash

EN 11612

A1, A2, B1, C1, E3, F1 EN 11611

Class 2

(*) Tested in accordance to ISO 15025 after 100 industrial washes at 75 $^\circ\!\mathrm{C}$

4 XMFireLine



SCAN FOR



GEFEST-480

BLACK #128-01	GREY #128-02
DARK NAVY #124-01	RED #128-06
GREEN #128-03 * Actual colours of fabric may vary.	YELLOW #128-11
This is due to the fact that colours on paper lo	
CARE INSTRUCTIONS:	P Keep in cool dry place, with no direct sunlight.

Article	Composition	Antistatic	Weight	Weave	Usable width	Finishes
GEFEST-480	100% Cotton	-	480 gsm ±5%	Satin 5 /2	150 cm	Flame Retardant
	Tensile str. ISO 13934-1	Tearing str. ISO 13937-2	Shrinkage ISO 5077 after 5 washes		Abrasion Resist. ISO 12947-2	Pilling Resist. ISO 12945-2
WARP	1800 N	28 N	≤ 3% ≤ 3%		0E 000 miles	1
WEFT	1200 N	25 N			35 000 rubs	4

		LIGHT	MID	DARK	
COLOUR FASTNESS		Orange, Red, Yellow	Green, Grey	Dark Navy	Black
COLOUR CHANGE		4-5	4-5	4-5	4
STAIN ON POLYESTER	WASHING 60°C ISO 105 CO6	4-5	4-5	4	4
STAIN ON COTTON		4	4	4	4
WET RUBBING	ISO 105 X12	3	3	2-3	2
DRY RUBBING	ISO 105 X12	4	4	4	4
LIGHT	ISO 105 B02	3	4	4	4





100% COTTON , 420 GSM, SATIN 4/1

FLAME RETARDANT

COTTON FABRIC | WELDING

Gefest-420 flame retardant protective fabric is purposed for professional welders clothing used in variety areas like machinery, metallurgy, oil and gas pipeline construction, automotive industry, etc. Satin weave of Gefest-420 is extremely useful on protective overalls, bibs and aprons for welders and other workers making molten metal drops slide off of the smooth surface of fabric easily. Being made of natural fibers it makes comfortable garments to wear and protects from risks of Flash Fire and Electric Arc.

6 XMFireLine



EN 11612

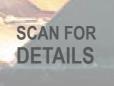
A1, A2, B1, C1, E3, F1 EN 11611

Class 2

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EN 61482-1

16,1 cal cm²





GEFEST-420



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Keep in cool dry place, with no direct sunlight.

Article	Composition	Antistatic	Weight	Weave	Usable width	Finishes	
GEFEST-420	100% Cotton	-	420 gsm ±5%	Satin 4 /1	150 cm	Flame Retardant	
	Tensile str. ISO 13934-1	Tearing str. ISO 13937-2	Shrinkage ISO 5077 after 5 washes		Abrasion Resist. ISO 12947-2	Pilling Resist. ISO 12945-2	
WARP	1700 N	36 N	≤ 3% ≤ 3%		01 000 miles	,	
WEFT	1500 N	57 N			31 300 rubs	4	

		LIGHT	MID	DARK	
COLOUR FASTNESS		Orange, Red, Yellow	Green, Grey	Dark Navy	Black
COLOUR CHANGE		4-5	4-5	4-5	4-5
STAIN ON POLYESTER	WASHING 60°C ISO 105 CO6	4-5	4-5	4	4
STAIN ON COTTON		4	4	4	4
WET RUBBING	ISO 105 X12	3	3	2-3	2
DRY RUBBING	ISO 105 X12	4	4	4	4
LIGHT	ISO 105 BO2	3	4	4	4



EN 1149-5 EN 61482-1 EN 61482-2

9,2 cal cm2

Class 1

EN 1149-3 method 2

COLOMBO AS

99% COTTON, 1% ANTISTATIC YARN, 350 GSM, TWILL 2/2

FLAME RETARDANT, ANTISTATIC

COTTON FABRIC | WELDING

Colombo AS flame retardant protective fabric is best used in such industries as Automotive, Petrochemical, Power energetics. Made of natural fibers it is soft and comfort to wear and at the same time Colombo AS protects from risks of Flash fire, Electric Arc and ESD sparks. It is very durable and has unique balance of high tear resistance in both warp and weft directions. This endurance provided by trendy and tough weave twill 2/2. Carbon antistatic yarn woven into the surface of Colombo AS fabric makes garments absolutely safe to wear in explosive environment and ensures the necessary charge decay. Antistatic fiber prevents Electrostatic Discharge (ESD) sparks and safely discharges static electricity eliminating the risk of fire and explosion.

8 XMFireLine



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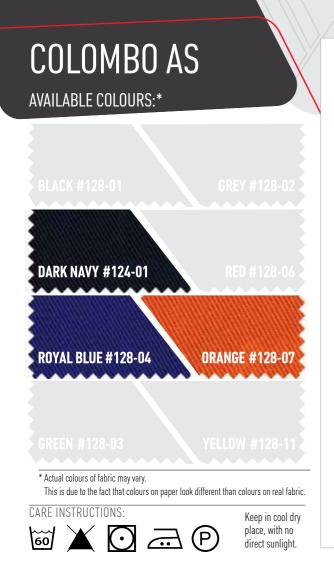
EN 11612

A1, A2, B1, C1, E3, F1 EN 11611

Class 2

SCAN FOR DETAILS





Article	Composition	Antistatic	Weight	Weave	Usable width	Finishes
COLOMBO AS	99% Cotton, 1% Antistaic Yarn	Carbon (Belltron)	350 gsm ±5%	Twill 2 /2	150 cm	Flame Retardant
	Tensile str. ISO 13934-1	Tearing str. ISO 13937-2	Shrinkage ISO 5077 after 5 washes		Abrasion Resist. ISO 12947-2	Pilling Resist. ISO 12945-2
WARP	1800 N	45 N	≤ 3% ≤ 3%		2/ 000 rube	1
WEFT	1100 N	40 N			26 000 rubs	4

		LIGHT	MID	DARK	
COLOUR FASTNESS		Orange, Red	Grey	Dark Navy, Royal Blue	Black
COLOUR CHANGE		4-5	4-5	4-5	4-5
STAIN ON POLYESTER	WASHING 60°C ISO 105 CO6	4-5	4-5	4	4
STAIN ON COTTON		4	4	4	3-4
WET RUBBING	ISO 105 X12	3	3	2-3	2
DRY RUBBING	ISO 105 X12	4	4	4	4
LIGHT	ISO 105 BO2	3	4	4	4





FLAME RETARDANT, ANTISTATIC

COTTON FABRIC | OIL & GAS

Etna is a 350 gsm middleweight quality cotton fabric with a flame retardant finishing designed for garments used in metallurgy. Etna FR-fabric has the highest level of protection from molten metal splashes with E3, in accordance to ISO 9185. Satin weave of Etna fabric is very useful on protective overalls, bibs and aprons for welders and other workers making molten metal drops slide off of the smooth surface of fabric easily. Being made of natural fibers it makes comfortable garments to wear and protects from risks of Flash Fire, Electric Arc and ESD sparks. Carbon antistatic yarn woven in stripes makes garments absolutely safe to wear in explosive environment and ensures the necessary charge decay.

(*) Tested in accordance to ISO 15025 after 100 industrial washes at 75 $^\circ\!\mathrm{C}$

10 XM FireLine



SCAN FOR DETAILS



ETNA



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Keep in cool dry place, with no direct sunlight.

Article	Composition	Antistatic	Weight	Weave	Usable width	Finishes	
ETNA	99% Cotton, 1% Antistaic Yarn	Carbon (Belltron)	350 gsm ±5%	Satin 4 /1	150 cm	Flame Retardant	
	Tensile str. ISO 13934-1	Tearing str. ISO 13937-2	Shrinkage ISO 5077 after 5 washes		Abrasion Resist. ISO 12947-2	Pilling Resist. ISO 12945-2	
WA	P 1400 N	38 N	≤(3%	01 000 miles	1	
WE	T 1100 N	65 N	≤Ű	3%	21 000 rubs	4	

		LIGHT	MID	DARK	
COLOUR FASTNESS		Orange, Red	Green, Grey	Dark Navy, Royal Blue	Black
COLOUR CHANGE		4-5	4-5	4-5	4-5
STAIN ON POLYESTER	WASHING 60°C ISO 105 CO6	4-5	4-5	4	4
STAIN ON COTTON		4	4	4	4
WET RUBBING	ISO 105 X12	3	3	2-3	2-3
DRY RUBBING	ISO 105 X12	4	4	4	4
LIGHT	ISO 105 BO2	3	4	4	4



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EN 61482-2

Class 1

EN 1149-5

EN 1149-3 method 2

EN 11612

A1, A2, B1, C1, E3, F1 EN 11611

Class 1

CORFU-330

99% COTTON, 1% ANTISTATIC YARN 330 GSM, TWILL 3/1

FLAME RETARDANT, ANTISTATIC

COTTON FABRIC | MACHINE BUILDING

Corfu-330 is a flame-retardant 100% cotton fabric with 330 gsm density, with a classic twill 3/1 weave. Made of 100% natural fibre, it is comfortable to wear as everyday flame-retardant workwear such as FR-pants, FR-jackets, FR-bibs, and FR-overalls.











Article	Composition	Antistatic	Weight	Weave	Usable width	Finishes	
CORFU-330	99% Cotton, 1% Antistatic yarn	Carbon (Belltron)	330 gsm ±5%	Twill 3 /1	150 cm	Flame Retardant	
	Tensile str. ISO 13934-1	Tearing str. ISO 13937-2	Shrinkage ISO 5077 after 5 washes		Abrasion Resist. ISO 12947-2	Pilling Resist. ISO 12945-2	
WARP	1100 N	28 N	≤ 3% ≤ 3%		20.000 miles	3-4	
WEFT	610 N	25 N			20 000 rubs		

			LIGHT	MID	DARK	
С	COLOUR FASTNESS		Orange, Red	Grey	Dark Navy, Royal Blue	Black
COL	OUR CHANGE		4-5	4-5	4-5	4-5
STAIN ON	N POLYESTER	WASHING 60°C ISO 105 CO6	4-5	4-5	4	4
STAI	N ON COTTON		4	4	4	3-4
۷	VET RUBBING	ISO 105 X12	3	3	2-3	2
[ORY RUBBING	ISO 105 X12	4	4	4	4
	LIGHT	ISO 105 BO2	3	4	4	4



MADEIRA-320

100% COTTON, 320 GSM, TWILL 3/1

FLAME RETARDANT

COTTON FABRIC | MACHINE BUILDING

Madeira-320 is a flame retardant protective fabric made of pure long staple cotton. It can be used for middleweight clothing for welding as well as in metal processing works in heavy machinery, automotive industry, etc. Madeira-320 is a balanced choice for daily used FR-trousers, FR-jackets, FR-coveralls or FR-bibs in work environment with risks of exposure to heat and flame. Being made of 100% natural fibers it makes garments comfortable to wear and protects from risks of Flash Fire and Electric Arc at the same time.

(*) Tested in accordance to ISO 15025 after 100 industrial washes at 75 $^\circ\mathrm{C}$

14 XM FireLine



100 x wash

EN 11611

Class 1

EN 11612

A1, A2, B1, C1, E3, F1





MADEIRA-320



SPECIFICATION

Article	Composition	Antistatic	Weight	Weave	Usable width	Finishes	
MADEIRA-320	100% Cotton	-	320 gsm ±5%	Twill 3 /1	150 cm	Flame Retardant	
	Tensile str. ISO 13934-1	Tearing str. ISO 13937-2	Shrinkage ISO 5077 after 5 washes		Abrasion Resist. ISO 12947-2	Pilling Resist. ISO 12945-2	
WARP	1600 N	22 N	≤ 3%		27 E00 miles	0 /	
WEFT	1000 N	17 N	≤ 3%		26 500 rubs	3-4	

		LIGHT	MID	DARK	
COLOUR FASTNESS		Orange, Red, Yellow	Green, Grey	Dark Navy, Navy, Royal Blue	Black
COLOUR CHANGE		4-5	4-5	4-5	4-5
STAIN ON POLYESTER	WASHING 60°C ISO 105 CO6	4-5	4-5	4	4
STAIN ON COTTON		4	4	4	4
WET RUBBING	ISO 105 X12	3	3	2-3	2-3
DRY RUBBING	ISO 105 X12	4	4	4	4
LIGHT	ISO 105 BO2	3	4	4	4

15





100% COTTON, 260 GSM, TWILL 3/1

FLAME RETARDANT

COTTON FABRIC | MACHINE BUILDING

Madeira-260 is a flame retardant fabric made of long staple cotton. It can be used for lightweight and middleweight clothing in heavy machinery, automotive industry, etc. Protective clothing made of Madeira-260 FR fabric provides the wearer with comfort and protection from risks of Flash Fire and Heat. Madeira-260 is the right choice for the production of affordable fr-clothing with a high level of protection against heat and flame.





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EN 11611

Class 1

EN 11612

A1, A2, B1, C1, E2, F1



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BLACK #128-01	GREY #128-02
DARK NAVY #124-01	RED #128-06

Article	Composition	Antistatic	Weight	Weave	Usable width	Finishes
MADEIRA-260	100% Cotton	-	260 gsm ±5%	Twill 3 /1	150 cm	Flame Retardant
	Tensile str. ISO 13934-1	Tearing str. ISO 13937-2	Shrinkage ISO 5077 after 5 washes		Abrasion Resist. ISO 12947-2	Pilling Resist. ISO 12945-2
WARP	1100 N	28 N	≤ 3%		20.000 miles	0 /
WEFT	560 N	26 N	≤ 3%		20 000 rubs	3-4

		LIGHT	MID	DARK	
COLOUR FASTNESS		Red	Grey	Dark Navy, Royal Blue	Black
COLOUR CHANGE	WASHING	4-5	4-5	4-5	4
STAIN ON POLYESTER	60°C	4-5	4-5	4-5	4
STAIN ON COTTON	ISO 105 CO6	4	4	4-5	3-4
WET RUBBING	ISO 105 X12	3	3	2-3	2
DRY RUBBING	ISO 105 X12	4	4	4	4
LIGHT	ISO 105 B02	3	4	4	4



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EN 11611

Class 1

EN 61482-1

8,6 $\frac{cal}{cm^2}$

99% COTTON, 1% ANTISTATIC YARN, 220 GSM, TWILL 2/1

ATIC YARN, ATIC YARN, A1, A2, B1, C1, E2, F1 EN 1149-5 EN 1149-5 method 2

100 x wash

FLAME RETARDANT, ANTISTATIC

COTTON FABRIC | LIGHTWEIGHT UNIFORM

Fiji is a light flame retardant fabric with classic twill weave, developed specially for light flame retardant clothing. Fiji protective fabric is recommended for use as a middle layer of fr-clothing, like shirts, vests, light pants, or even light overalls for hot climate. FR-clothing made of Fiji fabric in combination with fire-resistant underwear and fire-resistant outer clothes provides superb protection of workers in risk zones. Made of natural fibers it is soft and comfort to wear and at the same time Fiji FR-fabric protects from risks of Flash fire and ESD sparks. Carbon antistatic yarn integrated as stripes in the surface of Fiji makes it absolutely safe for use in explosive atmospheres. To prevent Electrostatic Discharge (ESD) sparks, antistatic fibers safely discharge static electricity eliminating the risk of fire and explosion.

(*) Tested in accordance to ISO 15025 after 100 industrial washes at 75 $^\circ\mathrm{C}$

18 XM FireLine







FIJI AVAILABLE COLOURS:*

BLACK #128-01	GREY #128-02
DARK NAVY #124-01	RED #128-06
ROYAL BLUE #128-04	ORANGE #128-07
GREEN #128-03	YELLOW #128-11
* Actual colours of fabric may vary. This is due to the fact that colours on paper	look different than colours on real fabric.
CARE INSTRUCTIONS:	Keep in cool dry place, with no direct sunlight.

Article	Composition	Antistatic	Weight	Weave	Usable width	Finishes
FIJI	99% Cotton, 1% Antistatic yarn	Carbon (Belltron)	220 gsm ±5%	Twill 2 /1	150 cm	Flame Retardant
	Tensile str. ISO 13934-1	Tearing str. ISO 13937-2	Shrinkage ISO 5077 after 5 washes		Abrasion Resist. ISO 12947-2	Pilling Resist. ISO 12945-2
WARP	1200 N	21 N	≤ 3%		20.000 miles	1
WEFT	430 N	24 N	≤ 3	3%	20 000 rubs	4

		LIGHT	MID	DARK	
COLOUR FASTNESS		Orange, Red, Yellow	Grey	Dark Navy, Royal Blue	Black
COLOUR CHANGE		4-5	4-5	4-5	4-5
STAIN ON POLYESTER	WASHING 60°C ISO 105 CO6	4-5	4-5	4	4
STAIN ON COTTON		4	4	4	3-4
WET RUBBING	ISO 105 X12	3	3	2-3	2
DRY RUBBING	ISO 105 X12	4	4	4	4
LIGHT	ISO 105 BO2	3	4	4	4



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ATPV

9,6 cal

EN 13034 EN 61482-1 EN 61482-2 EN 20471

Class 1

80% COTTON, 19% POLYESTER, 1% ANTISTATIC YARN, 300 GSM, TWILL 2/2

FLAME RETARDANT ANTISTATIC, MULTI-RISK

COTTON I POLYESTER FABRIC TRANSPORTATION OF OIL & GAS

Poseidon 300 is a high quality poly-cotton fabric with high content of cotton, improved by addition of polyester and antistatic yarn. It is developed for workers of Oil and Gas industries and it suits well both for rig-chiefs jackets and trousers and for oil-pipeline workers uniforms. The fabric with modern 2/2 twill weave is very comfortable to wear, has much better then pure cotton tear resistance and has excellent antistatic properties. An optional Multi-Risk treatment, makes it water repellent and also resistant to the influence of acids, alkali, grease and oil.

POSEIDON-300

(*) Tested in accordance to ISO 15025 after 100 industrial washes at 75 $^\circ\mathrm{C}$

20 XM FireLine



EN 11612

A1, A2, B1, C1, E3, F1 EN 11611

Class 1

EN 1149-5

EN 1149-3

method 2

SCAN FOR DETAILS



POSEIDON-300



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Keep in cool dry place, with no direct sunlight.

Article	Composition	Antistatic	Weight	Weave	Usable width	Finishes
POSEIDON 300	80% Cotton, 19% Polyester, 1% Antistatic yarn	Carbon (Belltron)	300 gsm ±5%	Twill 2 /2	150 cm	Flame Retardant
	Tensile str. ISO 13934-1	Tearing str. ISO 13937-2	Shrinkage ISO 5077 after 5 washes		Abrasion Resist. ISO 12947-2	Pilling Resist. ISO 12945-2
WARP	1400 N	21 N	≤ 3%		20.200 ruba	1
WEFT	700 N	17 N	≤ 3%		28 300 rubs	4

		LIGHT	MID	DARK	
COLOUR FASTNESS		Orange, Red, Yellow	Green, Grey	Dark Navy, Navy, Royal Blue	Black
COLOUR CHANGE		4-5	4-5	4-5	4-5
STAIN ON POLYESTER	WASHING 60°C ISO 105 CO6	3-4	4	2-3	2-3
STAIN ON COTTON		4	4-5	4	3-4
WET RUBBING	ISO 105 X12	3-4	3-4	2-3	2-3
DRY RUBBING	ISO 105 X12	4-5	4-5	3	3-4
LIGHT	ISO 105 BO2	3	3-4	3-4	4



EN 61482-1

 $10 \frac{\text{cal}}{\text{cm}^2}$

EN 61482-2

Class 1

EN 20471

POSEIDON-245

80% COTTON, 19% POLYESTER, 1% ANTISTATIC YARN, 245 GSM, TWILL 2/2

FLAME RETARDANT ANTISTATIC, MULTI-RISK

COTTON I POLYESTER FABRIC TRANSPORTATION OF OIL & GAS

Poseidon-245 is a lighter version of our popular fabric Poseidon-300 from XM FireLine range. Cotton rich blend ensures comfort with high quality natural fibers and features durability properties of polyester, such as higher tear and abrasion resistance. This fabric has been developed for use in a broad range of industries including petrochemical, utilities, etc., especially for hot climate countries. Modern 2/2 twill weave is complemented by Belltron® carbon antistatic yarn in a stripe pattern. Flame retardant and antistatic properties provide an excellent protection from risks of Flash Fire and ESD sparks. Poseidon-245 is optimal for summer protective FR clothes for its light weight, comfortable wearing and good level of protection.

(*) Tested in accordance to ISO 15025 after 100 industrial washes at 75 $^\circ\mathrm{C}$

22 XM FireLine



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EN 11612

A1, A2, B1, C1, E3, F1 EN 11611

Class 1

EN 1149-5

EN 1149-3

method 2

EN 13034



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EN 14116

INDEX-3

POSEIDON-245

AVAILABLE COLOURS:*



Keep in cool dry place, with no direct sunlight.

Article	Composition	Antistatic	Weight	Weave	Usable width	Finishes
POSEIDON-245	80% Cotton, 19% Polyester, 1% Antistatic yarn	Carbon (Belltron)	245 gsm ±5%	Twill 2 /2	150 cm	Flame Retardant
	Tensile str. ISO 13934-1	Tearing str. ISO 13937-2	Shrinkage ISO 5077 after 5 washes		Abrasion Resist. ISO 12947-2	Pilling Resist. ISO 12945-2
WARP	1200 N	25 N	≤ 3%		2E 000 ruba	4
WEFT	540 N	20 N	≤ 3%		25 000 rubs	4

		LIGHT	MID	DARK	
COLOUR FASTNESS		Orange, Red, Yellow	Green, Grey	Dark Navy, Navy, Royal Blue	Black
COLOUR CHANGE		4-5	4-5	4-5	4-5
STAIN ON POLYESTER	WASHING 60°C ISO 105 CO6	3-4	4	2-3	2-3
STAIN ON COTTON		4	4-5	4	3-4
WET RUBBING	ISO 105 X12	3-4	3-4	2-3	2-3
DRY RUBBING	ISO 105 X12	4-5	4-5	3	3-4
LIGHT	ISO 105 BO2	3	3-4	3-4	4



SONORA

80% COTTON, 20% POLYESTER, 185 GSM, PLAIN 1/1

FLAME RETARDANT

SONORA AS

80% COTTON, 19% POLYESTER, 1% ANTISTATIC YARN, 185 GSM, PLAIN 1/1

COTTON I POLYESTER FABRIC TRANSPORTATION OF OIL & GAS

Sonora-185 and Sonora-185 AS are light flame retardant fabrics for protective clothing for hot climate. Sonora-185 AS made of 80% cotton, 19% polyester, 1% antistatic yarn with flame retardant finishing. Sonora-185 is made of 80% cotton and 20% polyester with flame retardant finishing. The areas of their use are Transportation of Oil & Gas (pipelines workers), Petrochemical(refineries staff), Utilities (Electrical/Water/Gas service companies personnel) etc. High quality cotton rich blend, improved by addition of polyester, provides that Sonora fr-fabric has a comfort of natural fibers and durability, higher tear resistance and beter colorfastness of polyester. Sonora-185 AS has high quality Belltron antistatic yarn embedded in its structure. These carbon stripes give to the wearer extra protection against Static Electricity sparks, which might be dangerous in explosive atmospheres of Refineries or Oil Terminals.

24 XMFireLine

OUR PARTNERS 0

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EN 11612

A1, C1, F1

EN 11612

A1, A2, C1, F1

EN 1149-5

EN 1149-3 method 2



SCAN FOR DETAILS



SONORA/SONORA AS AVAILABLE COLOURS:*	SONORA	SONORA AS
BLACK #128-01 GREY #128-02		
DARK NAVY #124-01 RED #128-06		
ROYAL BLUE #128-04 ORANGE #128-07		
GREEN #128-03 YELLOW #128-11 * Actual colours of fabric may vary. This is due to the fact that colours on paper look different than colours on real fabric.		
CARE INSTRUCTIONS: Keep in cool dry place, with no direct sunlight.		

Article	Composition	Antistatic	Weight	Weave	Usable width	Finishes
SONORA	80% Cotton, 20% Polyester	-	185gsm ±5%	Plain 1/1	150 cm	Flame Retardant
SONORA AS	80% Cotton, 19% Polyester, 1% AS	Carbon (Belltron)	185gsm ±5%	Plain 1/1	150 cm	Flame Retardant
	Tensile str. ISO 13934-1	Tearing str. ISO 13937-2	Shrinkage after 5		Abrasion Resist. ISO 12947-2	Pilling Resist. ISO 12945-2
WARP	750 N	16 N	<u> </u>	3%	17 000 rubs	4
WEFT	550 N	15 N	≤ 3%			4

		LIGHT	MID	DARK	
COLOUR FAS	STNESS	Orange, Red, Yellow	Green, Grey	Dark Navy, Navy, Royal Blue	Black
COLOUR CHANGE		4-5	4-5	4-5	4-5
STAIN ON POLYESTER	WASHING 60°C ISO 105 CO6	4	4-5	4	4
STAIN ON COTTON		4-5	4-5	4-5	4
WET RUBBING	ISO 105 X12	4	3	3	3
DRY RUBBING	ISO 105 X12	4-5	4	4	4
LIGHT	ISO 105 BO2	3	4	4	4



EN 61482-1 EN 61482-2

Class 1

 $12 \frac{cal}{cm^2}$

87% COTTON , 12% NYLON, 1% ANTISTATIC YARN, 260 GSM, SATIN 4/1

VOLCANO

FLAME RETARDANT ANTISTATIC, MULTI-RISK

COTTON/NYLON FABRIC | OIL & GAS

Volcano is an innovative flame retardant cotton-nylon blend being extremely tear resistant yet relatively light. Durability of this fabric sufficiently increases life cycle of flame retardant garment. Weighing only 260 gsm Volcano fabric doesn't cut any corners in protective measures and meets high equirements of electric arc protection with 12 cal/cm² (defined by ISO 61482-1-1). It's also certified to ISO 11611 and ISO 11612 standards for protective clothing. Moreover, Volcano has additional Multi-Risk treatment which protects against acids, oil, grease and repels water. Multi-Risk properties are confirmed by ISO 13034 certificate.

100 x wash

EN 11612

A1, A2, B1, C1, E3, F1 EN 11611

Class 1

EN 1149-5

EN 1149-3

method 2

EN 13034

(*) Tested in accordance to ISO 15025 after 100 industrial washes at 75 $^\circ\!\mathrm{C}$

26 XM FireLine





VOLCANO

AVAILABLE COLOURS:*



Article	Composition	Antistatic	Weight	Weave	Usable width	Finishes
VOLCANO	87% Cotton, 12% Nylon, 1% Antistatic yarn	Carbon (Belltron)	260 gsm ±5%	Satin 4 /1	150 cm	Flame Retardant
	Tensile str. ISO 13934-1	Tearing str. ISO 13937-2	Shrinkage after 5		Abrasion Resist. ISO 12947-2	Pilling Resist. ISO 12945-2
WARP	860 N	19 N	<u>≤</u> (3%	20.000 ruba	ŋ
WEFT	670 N	33 N	≤ 3	3%	28 000 rubs	3

		LIGHT	MID	DARK	
COLOUR FASTNESS		Orange, Red	Green, Grey	Dark Navy, Navy, Royal Blue	Black
COLOUR CHANGE		4-5	4-5	4-5	4-5
STAIN ON POLYESTER	WASHING 60°C ISO 105 CO6	3-4	4	2-3	2-3
STAIN ON COTTON		4	4-5	4	3-4
WET RUBBING	ISO 105 X12	3-4	3-4	2-3	2-3
DRY RUBBING	ISO 105 X12	4-5	4-5	3	3-4
LIGHT	ISO 105 B02	3	3-4	3-4	4



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FR-LINING 100% COTTON 160 GSM, FR-PLAIN 1/1

INDEX-3

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EN 14116

FLAME RETARDANT

COTTON FABRIC | FIREFIGHTERS

A very light flame retardant fabric made of 100% cotton with density of 160 g/m² and plain 1/1 weave. Thin, soft and pleasant to touch, yet durable and flame retardant.

Flame retardant lining is indispensable in the fr-clothing with membrane layers, such as in fire fighting coverals and suits. It can also be used for warm winter fr-clothing (jacket and trousers).

Internal lining fabric is an integral part of the heat protective package, and performs several functions: isolating membrane, protecting against abrasion, increases protection against heat and provides additional comfort of worker.

28 XM FireLine



SCAN FOR DETAILS

FR-LINING AVAILABLE COLOURS:*	
BLACK #128-01	GREY #128-02
GREEN #128-03 * Actual colours of fabric may vary.	YELLOW #128-11
This is due to the fact that colours on pape CARE INSTRUCTIONS:	r look different than colours on real fabric. Keep in cool dry place, with no direct sunlight.

	Article	Composition	Antistatic	Weight	Weave	Usable width	Finishes
F	-R-Liling	100% Cotton	-	160 gsm ±5%	Plane 1 /1	150 cm	Flame Retardant
		Tensile str. ISO 13934-1	Tearing str. ISO 13937-2	Shrinkage after 5	e ISO 5077 washes	Abrasion Resist. ISO 12947-2	Pilling Resist. ISO 12945-2
	WARP	710 N	16 N	≤ 3	3%	0E 000	1
	WEFT	470 N	13 N	<u>≤</u> (3%	35 000 rubs	4

		LIGHT	MID	DARK	
COLOUR FAS	STNESS	Orange, Red, Yellow	Green, Grey	Dark Navy, Navy, Royal Blue	Black
COLOUR CHANGE		4-5	4-5	4-5	4-5
STAIN ON POLYESTER	WASHING 60°C ISO 105 CO6	4-5	4-5	4	4
STAIN ON COTTON		4	4	4	3-4
WET RUBBING	ISO 105 X12	4-5			
DRY RUBBING	ISO 105 X12	2			
LIGHT	ISO 105 B02	> 4			



ARAVIS-120

50% META ARAMID, 50% FR VISCOSE

120GSM, FR-PLAIN 1/1

EN 11612

A1, A2, C1, F1

FLAME RETARDANT FABRIC FOR FR-CLOTHING

INHERENT

META ARAMID FABRIC | FR-TURNOUT GEAR

Aravis FR-liner is designed for fire fighter firefighter's clothing with a new level of moisture management properties. It is light, thin and inherently flame resistant.

The purpose of thermal liner is to be used as a part of 4-layer sandwich for firefighter's turnout gear. Aravis-120 FR-liner provides comfort for the wearer as it thin and light (120 gsm). At the same time Aravis-120 transports perspiration away from skin. The blend of aramid and viscose fibers makes Aravis-120 very durable. It also gives high level of thermo protection, due to its inherent Flame Retardant properties.

30 XM FireLine



VAILABLE COLOURS:*	
MELANGE GREY	
	RED #128-06
	ORANGE #128-07
	YELLOW #128-11
* Actual colours of fabric may vary. This is due to the fact that colours on paper	r look different than colours on real fabric

Article	Composition	Antistatic	Weight	Weave	Usable width	Finishes
ARAVIS-120	50% Meta-Aramid, 50% FR-Viscose	—	120 gsm ±5%	FR-Plain 1/1	150 cm	Flame Retardant
	Tensile str. ISO 13934-1	Tearing str. ISO 13937-2		e ISO 5077 washes	Abrasion Resist. ISO 12947-2	Pilling Resist. ISO 12945-2
WARP	420 N	20 N	≤S	3%		
WEFT	400 N	20 N	≤{	3%	_	

COLOUR FASTNESS

		MELANGE GREY
COLOUR CHANGE		4-5
STAIN ON POLYESTER	WASHING 60°C ISO 105 CO6	4-5
STAIN ON COTTON		4
WET RUBBING	ISO 105 X12	4-5
DRY RUBBING	ISO 105 X12	4
LIGHT	ISO 105 B02	4





93% M-ARAMID, 5% P-ARAMID, 2% ANTISTATIC 210 GSM, TWILL 2/1

INHERENT, ANTISTATIC

ARAMID FABRIC | INHERENT FR-CLOTHING

Artex-210 is an innovative inherent flame resistant fabric for protective and fr-clothing. This fabric is best used for emergency services (EMS clothing), for firefighters gear as well as for special forces, for marines uniform, for military pilots flight suits. Artex-210 is also suitable for FR bibs and FR overalls for workers in the oil and gas, chemical and power industries.

Artex-210 fabric provides protection against Fire, open Flame and Electric Arc. Inherent thermal protection cannot be washed away. The fabric is very durable and super resistant to abrasion.

Between other features of Artex-210 are light weight and good breathability, which gives extra comfort to the wearer. Due to integrated carbon antistatic yarn, Artex prevents building up electrostatic discharge (ESD) and eliminates the possibility of explosion in oil, gas and other industries

GRIDGESTONE

32 XM FireLine



EN 1149-5

EN 1149-3

method 2

EN 11612

A1, A2, B1

C1, F1

EN 469



SCAN FOR DETAILS



AVAILABLE COLOURS:*	
DARK NAVY #X602	NAVY #X628
GREEN #X609	ORANGE #X606
* Actual colours of fabric may vary. This is due to the fact that colours on pap	per look different than colours on real fabric.

Article	Composition	Antistatic	Weight	Weave	Usable width	Finishes
ARTEX-210	93% M-Aramid, 5% P-Aramid, 2% antistatic	Carbon (Belltron)	210 gsm ±5%	Twill 2 /1	150 cm	Flame Retardant
	Tensile str. ISO 13934-1	Tearing str. ISO 13937-2	Shrinkage ISO 5077 after 5 washes		Abrasion Resist. ISO 12947-2	Pilling Resist. ISO 12945-2
WARP	1400 N	50 N	≤ 3%			
WEFT	1500 N	49 N	≤Ű	3%	_	_

		LIGHT	MID	DARK	
COLOUR FASTNESS		Orange, Red, Yellow	Green, Grey	Dark Navy, Navy, Royal Blue	Black
COLOUR CHANGE	WASHING 60°C ISO 105 CO6	4-5	4-5	4-5	4
STAIN ON POLYESTER		4-5	4-5	4-5	4
STAIN ON COTTON		4	4-5	4-5	3-4
WET RUBBING	ISO 105 X12	3	3	3	2-3
DRY RUBBING	ISO 105 X12	4	4	4	4
LIGHT	ISO 105 BO2	3	3-4	4	4



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EN 61482-1

 $6,9\frac{\text{cal}}{\text{cm}^2}$

60% MODACRYLIC, 35% COTTON, 4% NYLON, 1% AS, 250 GSM, RIP-STOP

MURANO-250

INHERENT, ANTISTATIC

MODACRYLIC | MACHINE BUILDING

Murano-250 is a modacrylic fabric for fr-clothing. Made with modacrylic-cotton blend it has inherently flame retardant composition. It also includes nylon for more durability and antistatic fibers to avoid static electricity. Murano-250 is a very comfortable and versatile fr-fabric for long lasting protective performance.

34 XM FireLine



EN 11612

A1, A2, B1, C1, E1, F1 EN 11611

Class 1

EN 1149-5

EN 1149-3

method 2

EN 13034

SCAN FOR DETAILS



DARK NAVY #124-01	RED #128-06	

Art	ticle	Composition	Antistatic	Weight	Weave	Usable width	Finishes
MURA	NO-250	60% Modacrylic, 35% Cotton, 4% nylon, 1% Antistatic	Carbon (Belltron)	250 gsm ±5%	Rip-Stop	150 cm	Flame Retardant
		Tensile str. ISO 13934-1	Tearing str. ISO 13937-2	Shrinkage ISO 5077 after 5 washes		Abrasion Resist. ISO 12947-2	Pilling Resist. ISO 12945-2
	WARP	780 N	54 N	≤ (≤ 3%		4
	WEFT	600 N	36 N	≤C	3%	21 000 rubs	4

		LIGHT	MID	DARK	
COLOUR FASTNESS		Orange, Red, Yellow	Green, Grey	Dark Navy	Black
COLOUR CHANGE	WASHING 60°C ISO 105 C06	4-5	4-5	4-5	4
STAIN ON POLYESTER		4-5	4-5	4-5	4
STAIN ON COTTON		4	4-5	4-5	3-4
WET RUBBING	ISO 105 X12	3	3	3	2-3
DRY RUBBING	ISO 105 X12	4	4	4	4
LIGHT	ISO 105 BO2	3	3-4	4	4



EN 20471

60% MODACRYLIC, 39% COTTON, 1% ANTISTATIC YARN, 280 GSM, KNITTED

INHERENT, ANTISTATIC

MODACRYLIC | WINTER FR-CLOTHING

FR-Fleece is designed to use the softness and warmth of Fleece fabric with adding some extra features such as Heat and Flame Resistance. We use 60% Modacrylic fibers and 39% Cotton together with 1% Antistatic carbon fibers to get our 280gsm FR-Fleece. The part of Modacrylic fibers interwoven with Cotton provides to the the whole fabric its flame resistance. FR-Fleece can be used as a middle layer or warmer for winter fr-clothing.

FR-FLEECE-280

36 XMFireLine



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EN 11612

A1, B1,

C2, F1

EN 1149-5

EN 1149-3

method 2

SCAN FOR DETAILS





Article	Composition	Antistatic	Weight	Weave	Usable width	Finishes	
FR-FLEECE-280	60% Modacrylic, 39% Cotton, 1% Antistatic yarn	Carbon (Belltron)	280 gsm ±5%	Knitted	150 cm	Flame Retardant	
	Bursting Resistance ISO 13938-1		Shrinkage ISO 5077 after 5 washes				
WARP	232 kPa		50/				
WEFT	ZOZ KI	d	≤ 5%				

			LIGHT	MID	DARK	
	COLOUR FASTNESS		HiVizYellow	Green, Grey	Dark Navy	Black
	COLOUR CHANGE	WASHING 60°C ISO 105 CO6	4-5	4-5	4-5	4-5
STAI	N ON POLYESTER		3-4	4	2-3	2-3
S	STAIN ON COTTON		4	4-5	4	3-4
	WET RUBBING	ISO 105 X12	3-4	3-4	2-3	2-3
	DRY RUBBING	ISO 105 X12	4-5	4-5	3	3-4
	LIGHT	ISO 105 BO2	3	3-4	3-4	4



EN 20471

EN 1149-5 EN 61482-2

Class 1

EN 1149-3 method 2

EN 11612

A1, A2, B1, C1, F1

FR-JERSEY-200C

60% MODACRYLIC, 38% COTTON, 2% ANTISTATIC YARN, 200 GSM, KNITTED

INHERENT, ANTISTATIC

MODACRYLIC FABRIC | THERMAL CLOTHING

Flame retardant fabric FR-Jersey-200C 60% Modacrylic, 38% Cotton, 2% AS 200gsm is used for fr base layer (FR underwear). This FR knitted fabric with antistatic properties helps to save body warmth and increase flame retardant and thermal protection while wearing under fr-clothing (fr-jacket and fr-pants).

(*) Tested after 50 domestic washes at 40 °C

38 XM FireLine



SCAN FOR DETAILS





Article	Composition	Antistatic	Weight	Weave	Usable width	Finishes	
FR-JERSEY-200C	60% Modacrylic, 38% Cotton, 2% Antistatic	Carbon (Belltron)	200 gsm ±5%	Knitted fabric	155 cm	Flame Retardant	
	Bursting Resistance ISO 13938-1		Shrinkage ISO 5077 after 5 washes				
WARP	202 kPa		50/				
WEFT	ZUZ KI	rd -	≤ 5%				

			MID	DARK	
COLOUR FAS	COLOUR FASTNESS		Green, Grey	Dark Navy	Black
COLOUR CHANGE	WASHING 60°C ISO 105 C06	4-5	4-5	4-5	4-5
STAIN ON POLYESTER		3-4	4	4-5	3
STAIN ON COTTON	100 100 000	4	4-5	4-5	3-4
WET RUBBING	ISO 105 X12	3-4	3-4	3	3
DRY RUBBING	ISO 105 X12	4-5	4-5	4-5	3-4
LIGHT	ISO 105 B02	3	3-4	4	4

39



SCAN FOR

DETAILS

EN 1149-5 EN 61482-1 EN 20471

 $8 \frac{cal}{cm^2}$

EN 1149-3 method 2

60% MODACRYLIC 38% COTTON, 2% AS 230 GSM, KNITTED

INHERENT, ANTISTATIC

MODACRYLIC | MACHINE BUILDING

FR-PIQUE-230

The high level of demand for pique fabric is explained by excellent flameresistant, moisture-regulating, antistatic properties. Pique perfectly holds its shape and is practical. Advantages: good creasing resistance, an excellent degree of wear resistance, the fabric has hygroscopicity, good breathability, easy to care for. Additionally, FR-Pique protects against industrial hazards such as arc flashover and static electricity.

50 x wash*

OUR PARTNERS

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aitex BTTG

EN 11612

A1, A2, B1,

C1, F1

(*) Tested after 50 domestic washes at 40 °C

40 XM FireLine



Article	Composition	Antistatic	Weight	Weave	Usable width	Finishes	
FR-PIQUE-230	60% Modacrylic, 38% Cotton, 2% Antistatic	Carbon (Belltron)	230 gsm ±5%	Knitted Fabric	165 cm	Flame Retardant	
	Bursting Resistance ISO 13938-1		Shrinkage ISO 5077 after 5 washes				
WARP	190 kPa		≤ 5%				
WEFT							

		LIGHT	MID	DARK		
	COLOUR FASTNESS		HiViz Yellow	Green, Grey	Dark Navy	Black
	COLOUR CHANGE	WASHING 60°C ISO 105 CO6	4-5	4-5	4-5	4-5
ST	AIN ON POLYESTER		3-4	4	2-3	4
	STAIN ON COTTON		4	4-5	4	4
	WET RUBBING	ISO 105 X12	3-4	3-4	2-3	2-3
	DRY RUBBING	ISO 105 X12	4-5	4-5	3	4
	LIGHT	ISO 105 BO2	3	3-4	3-4	4



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EN 20471

EN 343

Class 3

EN 13034

FR-OXFORD-250

98% POLYESTER, 2% ANTISTATIC YARN, 250 GSM, PLAIN 1/1

FLAME RETARDANT, ANTISTATIC, OIL & WATER REPELLENT, BREATHABLE

POLYESTER FABRIC | FR-RAINWEAR

FR-Oxford is a water resistant outerwear fabric with flame retardant properties. Additionally it has antistatic, water, oil and stain resistant properties. Flame Retardant PU (Polyurethane) lamination provides superior rain protection and breathability. The fabric is designed for flame retardant winter workwear, rain jackets for jobs where multi-norm protection is needed. Besides regular colours FR-Oxford is available in Hi-Viz orange and yellow.





EN 14116

Index 1

EN 1149-5

EN 1149-3 method 2





FR-OXFORD-250

AVAILABLE COLOURS:*



SPECIFICATION

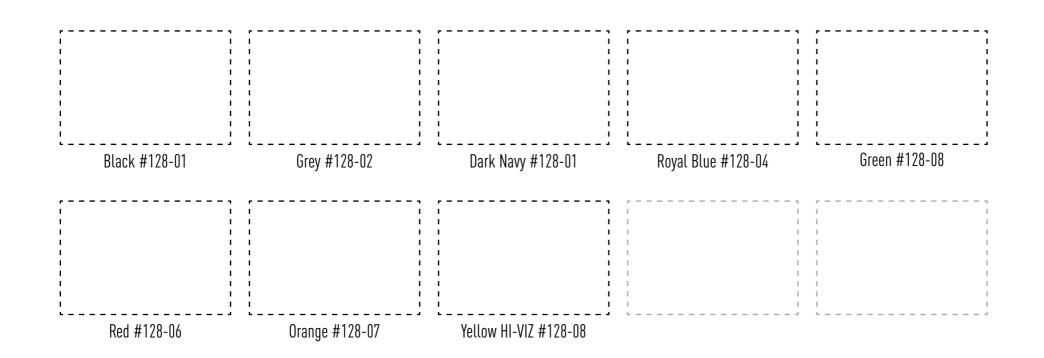
Article	Composition	Antistatic	Weight	Weave	Usable width	Finishes
FR-OXFORD-250	98% Polyester, 2% Antistatic yarn	Carbon (Belltron)	250 gsm ±5%	Plain 1 /1	150 cm	(PU) Flame Retardant
	Tensile str. ISO 13934-1	Tearing str. ISO 13937-2	Shrinkage ISO 5077 after 5 washes		Abrasion Resist. ISO 12947-2	Pilling Resist. ISO 12945-2
WARP	1300 N	100 N	<u>≤</u> (3%	20.000 miles	/ 5
WEFT	1200 N	84 N	<u>≤</u> (3%	20 000 rubs	4-5

direct sunlight.

COLOUR FASTNESS		LIGHT	MID	DARK	
		Orange, Red, Yellow	Green, Grey	Dark Navy, Navy, Royal Blue	Black
COLOUR CHANGE	WASHING 60°C ISO 105 CO6	4-5	4-5	4-5	4-5
STAIN ON POLYESTER		3-4	4	3-4	3-4
STAIN ON COTTON		4	4-5	4-5	4-5
WET RUBBING	ISO 105 X12	3-4	3-4	2-3	2-3
DRY RUBBING	ISO 105 X12	4-5	4-5	4	4
LIGHT	ISO 105 BO2	3	3-4	4	4



FABRIC SWATCH CARD







FLAME RETARDANT for FR-CLOTHING

abre

MADE TO LAST 50 × 75°C WASH





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