
CARRINGTON
TEXTILES
FLAME
RETARDANT COLLECTION
DURABILITY | MULTINORM | PROTECTION | PERFORMANCE
SHAPING THE FUTURE OF FABRIC

SHAPING THE FUTURE OF FABRIC

At Carrington Textiles we specialise in the development of protective fabrics with exceptional performance in the most demanding workplace environments.

Our fabrics have been saving lives for more than 130 years, and with our international network of factories, sales people and agents, we make sure they reach every corner of the world.

SCAN TO CHECK ALL AVAILABLE COLOURS FOR EACH FABRIC

A Truly Global Textile Manufacturer

We innovate to meet the most stringent performance requirements encountered in diverse areas. Working closely with garment manufacturers and rental laundries, we have an unrivalled knowledge of their evolving needs.

EXPERTISE
130+ YEARS OF TEXTILE KNOW-HOW

PRODUCTS
WIDE RANGE OF WORKWEAR, FLAME RETARDANT, WATERPROOF AND DEFENCE FABRICS

INDUSTRIES
LIGHT TO HEAVY INDUSTRY, HEALTHCARE, HOSPITALITY, DEFENCE AND MORE

FACTORIES
IN PAKISTAN, PORTUGAL AND THE UK

GLOBAL REACH
EXPORTING TO 80+ COUNTRIES

To see the full list of colours scan the QR code on page 2.

FLAME RETARDANT FABRICS

FLAMESHIELD 185
185gsm
100% cotton
plain

FLAMESHIELD 230
230gsm
100% cotton
2/1 twill

FLAMESHIELD 280
280gsm
100% cotton
3/1 twill

FLAMESHIELD 340
340gsm
100% cotton
3/1 twill

FLAMESHIELD SATIN 350
350gsm
100% cotton
4/1 satin

FLAMESHIELD SATIN 400
400gsm
100% cotton
4/1 satin

FLAMESHIELD SATIN 425
425gsm
100% cotton
4/1 satin

WELDSHIELD 500
500gsm
100% cotton
3/1 cross twill

FLAMEMASTER SATIN 330
330gsm
70% cotton / 30% polyester
4/1 satin

FLAMEMASTER SATIN 365
365gsm
75% cotton / 25% polyester
4/1 satin

FLAMEMASTER 365
365gsm
75% cotton / 25% polyester
2/2 twill

Please note:
Details within this guide are correct at the time of printing, but are subject to change without prior notice.
For details of exact colours and codes, please contact your Carrington Textiles representative, or visit **www.carrington.co.uk**

Igniting Safety, Extinguishing Risk

What are flame-retardant fabrics?

FR fabrics are a product specially treated to withstand ignition or have the ability to self-extinguish, providing essential protection for workers in high-heat or fire-risk environments.

Our FR fabrics offer:

50% +
Reduction in predicted body burn

20+
Colours available

100
Industrial washes tested - USA

50
Industrial washes tested - EU

Our accreditations

ISO NFPA 2112

Find all accreditations on **page 10**

Key Benefits

Retaining flame retardancy, providing comfort and offering versatile applications, our FR fabrics keep workers safe in high-risk environments.

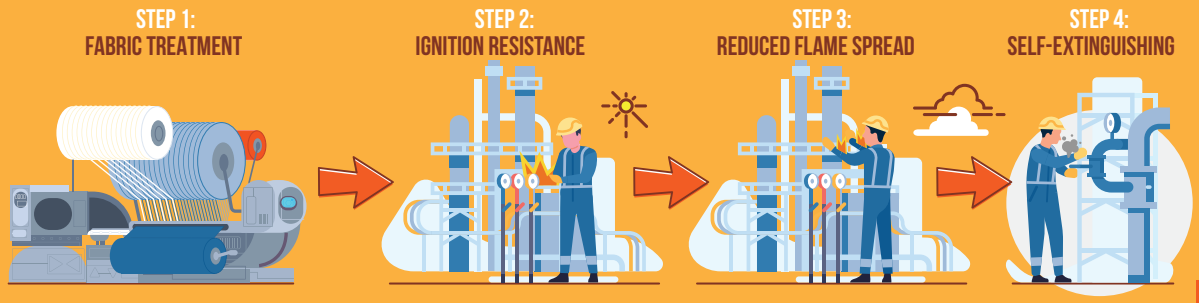
Durability
Retain flame retardancy for the life of the garment.

Comfort
Breathable and lightweight without compromising safety.

Versatile Applications
Wherever there is a risk of burn injuries.

Customisation
Available in a range of colours and compositions.

How do they work?



To see the full list of colours scan the QR code on page 2.

FR WITH ANTISTATIC FABRICS

FLAMESTAT 145
145gsm
99% cotton
1% anti-static material
plain

FLAMESTAT 250
250gsm
75% cotton / 24% polyester
1% antistatic
2/2 twill

FLAMESTAT SATIN 225
225gsm
50% cotton / 49% polyester
1% antistatic
4/1 satin, 9mm Negastat grid

FLAMESTAT SATIN 225 PRO 2
275gsm
50% cotton / 49% polyester
1% antistatic + PU Membrane
4/1 satin, 9mm Negastat grid

FLAMESTAT 290
290gsm
75% cotton / 24% polyester
1% anti-static
2/1 twill, 9mm Negastat grid

FLAMESTAT SATIN 300
300gsm
50% cotton / 49% polyester
1% anti-static
4/1 satin, 9mm Negastat grid

FLAMESTAT SATIN 345
345gsm
50% cotton / 49% polyester
1% anti-static
4/1 satin, 9mm Negastat grid

FLAMETECH 300AS
300gsm
50% cotton / 49% polyester
1% anti-static
Twill faced double cloth

FLAMESHIELD 340AS
340gsm
99% cotton
1% anti-static
3/1 twill

FLAMETUFF 220AS
220gsm
87% cotton / 12% nylon
1% anti-static
2/1 twill

FLAMETUFF 250AS
250gsm
87% cotton / 12% nylon
1% anti-static
3/1 twill, 9mm antistatic grid

FLAMETUFF SATIN 250AS
250gsm
85% cotton / 14% nylon
1% anti-static
4/1 satin

FLAMETOUGHER 280AS
280gsm
79% cotton / 20% CORDURA® nylon 6,6 / 1% antistatic
3/1 twill, 9mm antistatic grid

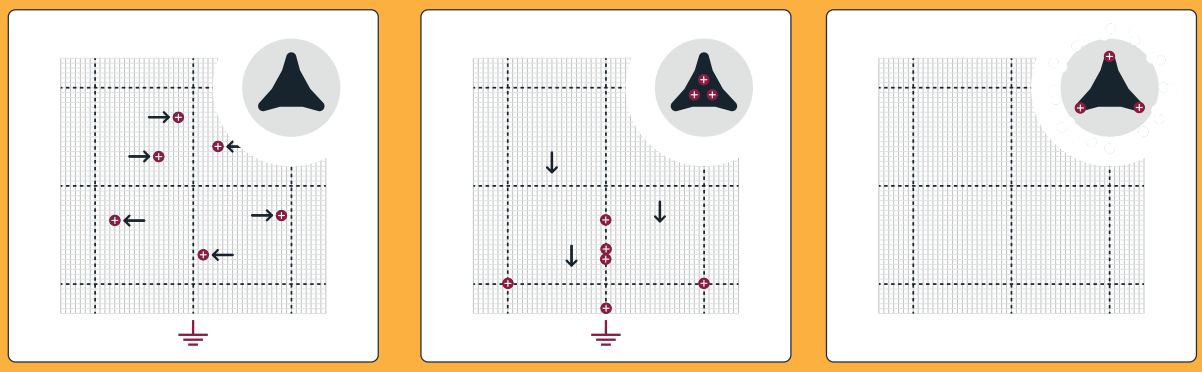
Two Threats, One Solution

Our flame-retardant fabrics with antistatic properties have been engineered to protect against flash fire and prevent static sparks that can ignite flammable substances.

Antistatic fabrics prevent electrostatic discharge (ESD) through three key mechanisms:

1. **Induction:** Redirects charges away from the fabric surface.
2. **Conduction:** Transfers electric charges safely to the ground.
3. **Corona Discharge:** Gradual release of charges into the air, reducing build-up.

Graphic source: nega-stat®.



INDUCTION | CONDUCTION | CORONA DISCHARGE

Certifications & Compliance

Our antistatic fabrics meet rigorous industry standards:

EN 61340-5-1: ESD protection for electronic devices*
EN 1149-1: Surface resistivity*
EN 1149-3: Charge decay measurement**
EN 1149-5: Performance requirements for electrostatic clothing.

* These standards can only be met with the right fabric construction and a surface conducting fibre.
** Surface conductors and core conductors can be assessed with this method.

Key Applications

Oil and Gas
Prevents burns, reduces static, avoids ignition risks

Chemical Processing
Protects from fire hazards, prevents static sparks

Electrical Utilities
Shields from arcs, minimises static electricity risks

To see the full list of colours scan the QR code on page 2.

INHERENT FABRICS

FLAMEBAN EXTRA 260 R/S
260gsm
50% Protex / 41% cotton
7% nylon / 2% antistatic
ripstop

FLAMEBAN MAX 310
310gsm
40% Protex / 24% FR viscose
20% polyester / 10% cotton
4% aramid / 2% antistatic
double weave

FLAMEBAN MAX 310 PRO 2
370gsm
40% Protex / 24% FR viscose
20% polyester / 10% cotton
4% aramid / 2% antistatic
+ PU membrane
double weave

FLAMEBAN MAX 310 PRO 3
410gsm
40% Protex / 24% FR viscose
20% polyester / 10% cotton
4% aramid / 2% antistatic
+ PU membrane & nylon knit
double weave

STRETCH FR FABRICS

FLAMETOUGHER 290AS FLEX
290gsm
78% cotton / 19% CORDURA®
nylon / 2% EOL (XLANCE®)
1% antistatic, 3/1 twill

FLAMEFLEX 300AS
300gsm
83% cotton / 14% polyester
2% EOL (XLANCE®)
1% antistatic, 3/1 twill

Engineered for Reliable Protection in Every Movement

Our Stretch FR Fabrics are rigorously tested to meet industry standards, ensuring they maintain flame retardant properties even when stretched. This advanced protection guarantees safety during any kind of movement, so the fabric continues to shield against flames without compromise.

Heat protection woven in Treated vs. Inherent: The Difference

Inherent flame-retardant fabrics offer built-in flame resistance, while treated fabrics like FR cotton or polyester are chemically treated post manufacture. Both provide reliable protection, but inherent fabrics often have higher Thermal Protective Performance (TPP) scores.

Main differences between FR fabrics:

Aspect	Inherent FR Fabrics	Treated FR Fabrics
Flame Resistance	Built into the fibre, self-extinguishing properties.	Achieved through chemical treatment after manufacturing.
Material	Aramids, modacrylic, FR viscose.	Cotton, polyester, nylon.
Durability	High, but some degrade under UV exposure.	Resistant to UV degradation; durable through laundering.
Comfort	High thermal protection but can be heavy and thick.	Lighter fabrics, maintaining comfort and breathability.
Cost	Typically more expensive due to intrinsic properties.	More cost-effective; treated fibres are less expensive.
TPP Scores	Often higher, offering better thermal protection.	Lower TPP scores but sufficient for many applications.
Laundering	Can suffer shrinkage, pilling, or loss of hand feel.	Maintains properties through industrial laundering.
Lifespan	Shorter if exposed to UV.	Long-lasting protection for the garment's life.

Let's give a closer look at the inherent FR fibres we use:

Fibre Type	Description	Benefits
Modacrylic	Inherently flame-retardant modacrylic fibre, often blended with other fibres.	• Permanent flame resistance. • Soft and comfortable. • Blends well with other materials for enhanced properties.
Lenzing FR	Inherently flame-retardant viscose fibre offering permanent flame resistance.	• High comfort and breathability. • Moisture-wicking properties. • Permanent flame resistance that does not wash out.
FR Viscose	Inherently flame-retardant viscose fibre offering permanent flame resistance.	• High comfort and breathability. • Moisture-wicking properties. • Permanent flame resistance that does not wash out.
Meta-Aramid	A type of aramid with inherent flame and heat resistance.	• High protection from flames and heat. • Lightweight and durable. • Does not melt or drip under heat.
Para-Aramid	High-performance aramid fibre known for exceptional strength and heat resistance.	• Durable with high strength-to-weight ratio. • Cut protection. • Abrasion durability, and superior heat and flame resistance without melting or dripping.

Essential Guide to FR Fabric Tests and Standards

Key FR Fabric Tests

ARC TEST

EN 61482-1

Resistance to high-energy electrical arcs

LIMITED FLAME SPREAD

EN ISO 11612, EN ISO 14116

Measures how fabrics resist the spread of flames

THERMAL MANIKIN TEST

ISO 13506

Evaluates overall burn protection in flash fire scenarios

MOLTEN METAL TEST

EN ISO 11612

Resistance to molten aluminium and iron

Main Certifications

Certification	Standard	What It Covers	In Guide Key
EN ISO 11612	Protection against heat and flame	Radiant heat, molten metal, contact heat	
EN ISO 14116	Limited flame spread	Protection against brief contact with flames	
AS/NZS 4824:2021	Australian/New Zealand standard	Fire-resistant protective clothing in wildland fire-fighting	
NFPA 2112	Flame-resistant PPE (US Standard)	Protection from flash fires	
BS EN ISO 15384:2020	Firefighter protective clothing	Performance requirements for wildland firefighting	
IEC 61482-2	Protection from electric arc	Arc flash protection	

What's Thermal Protective Performance (TPP)

It's a metric that measures how well a fabric protects against second-degree burns during heat and flame exposure. It quantifies the time a worker can be exposed to intense heat before burns occur. Higher TPP scores mean better protection. TPP is a critical factor in industries with high heat exposure, providing valuable insights into a fabric's protective capability in real-world conditions.

Other relevant certifications

Certification	Standard	What It Covers	In Guide Key
EN ISO 11611	Protection for welding	Welding splatter, flame, and heat resistance	
EN 343	Protection against rain	Waterproof and breathable materials	
EN 24920	Resistance to liquid penetration	Water-repellent properties	
EN 20471	High-visibility clothing	Visibility in low-light environments	
EN 13034	Protection against liquid chemicals	Limited protective performance against liquid chemicals	
EN 13758-1:2002	UV protective clothing	Protection against UV radiation	
EN 1149-5	Electrostatic discharge protection	Anti-static properties for use in explosive atmospheres	

The Fabric Standards Selector

Helping You Choose the Right FR Product

FR WITH ANTISTATIC FABRICS

Quality	GSM	Oz	Weave	Finish
Cotton/Poly:				
Flamestat 145	145	4.28	Plain	Flame Retardant + Splashgard
Flamestat 250	250	7.37	2/2 Twill	Flame Retardant + Splashgard
Flamestat Satin 225	225	6.64	4/1 Satin	Flame Retardant + Splashgard
Flamestat Satin 225 Pro 2	275	8.11	4/1 Satin	Flame Retardant + Splashgard
Flamestat 290	290	8.55	2/1 Twill	Flame Retardant
Flamestat Satin 300	300	8.85	4/1 Satin	Flame Retardant + Splashgard
Flamestat Satin 345	345	10.18	4/1 Satin	Flame Retardant
50/50 Cotton/Poly:				
Flametech 300AS	300	8.85	Twil DF Cloth	Flame Retardant
100% Cotton:				
Flameshield 340AS	340	10.03	3/1 Twill	Flame Retardant
Cotton/Nylon:				
Flametuff 220AS	220	6.49	2/1 Twill	Flame Retardant
Flametuff 250AS	250	7.37	3/1 Twill	Flame Retardant
Flametuff Satin 250AS	250	7.37	4/1 Satin	Flame Retardant
Flametougher 280AS	280	8.26	3/1 Twill	Flame Retardant
Stretch:				
Flametougher 290AS Flex	290	8.55	3/1 Twill	Flame Retardant
Flameflex 300AS	300	8.85	3/1 Twill	Flame Retardant

INHERENT FABRICS

Modacrylic Blends:				
Flameban Extra 260 R/S	260	7.67	Ripstop	Inherent Flame Retardant
Flameban Max 310	310	9.14	Double	Inherent Flame Retardant
Flameban Max 310 Pro 2	370	10.91	Double	Inherent Flame Retardant
Flameban Max 310 Pro 3	410	12.09	Double	Inherent Flame Retardant

FLAME RETARDANT FABRICS

100% Cotton:				
Flameshield 185	185	5.46	Plain	Flame Retardant
Flameshield 230	230	6.78	2/1 Twill	Flame Retardant
Flameshield 280	280	8.26	3/1 Twill	Flame Retardant
Flameshield 340	340	10.03	3/1 Twill	Flame Retardant
Flameshield Satin 350	350	10.32	4/1 Satin	Flame Retardant
Flameshield Satin 400	400	11.8	4/1 Satin	Flame Retardant
Flameshield Satin 425	425	12.53	4/1 Satin	Flame Retardant
Weldshield 500	500	14.75	3/1 Cross Twill	Flame Retardant
Cotton/Poly:				
Flamemaster Satin 330	330	9.73	4/1 Satin	Flame Retardant
Flamemaster Satin 365	365	10.77	4/1 Satin	Flame Retardant
Flamemaster 365	365	10.77	2/2 Twill	Flame Retardant

This table provides a technical overview of key industry standards for flame retardant fabrics. It simplifies the selection process by mapping each fabric to its compliance with norms for flame retardancy, high visibility, static discharge and electric arc protection, offering a practical guide for safety - critical workwear applications.

Please note: Entries marked with "(Pen)" indicate that test results are pending. Arc results are those found at the time of testing.

Flame Retardant		NFPA		Hi Vis	Electric Arc			Antistatic	
EN 11611	**EN 11612**	**2112**	**EN 14116**	**20471**	**ATPV**	**ELIM**	**BOX**	**1149-3**	**1149-5**
	A1, (C1 Pen)		Index 3/50i/75					Y	Y
Class 1	A1, A2, B1, C1, E1 & F1		Index 3/50i/75	Y	7.0	6.5	CL 1	Y	Y
	A1, B1, C1 & F1		Index 3/50i/75	Y			CL 1	Y	Y
	A1, B1, C1 & F1		Index 3/50i/75	Y	16.0	14.0	CL 1	Y	Y
Class 1	A1, A2, B1, C1, E1, F1		Index 3/50i/75	Y	8.2	7.8	CL 1	Y	Y
Class 1	A1, A2, B1, C1, E1, F1		Index 3/50i/75	Y	16.0	14.0	CL 1	Y	Y
Class 1	A1, B1, C1, E1 & F1		Index 3/50i/75	Y	18.0	16.0	CL 1	Y	Y
Class 1	A1, B1, C1 & F1		Index 3/50/60	Y			CL 1	Y	Y
Class 1	A1 & 2, B1, C1, E2, F1		Index 3/50i/75				CL 1	Y	Y
		Y	Index 3/50i/75		7.5			Y	Y
Class 1	A1, A2, B1, C1, E1 & F1		Index 3/50i/75		13.0	12.0	CL 1	Y	Y
	Pending		Pending					Pen	Pen
Class 1	A1, A2, B1, C1, E2, F1	Y	Index 3/50i/75		13.0	11.0	CL 1	Y	Y
Class 1	A1, A2, B1, C1, E2, F1	Y	Index 3/50i/75		10	9.3	CL 1	Y	Y
	A1 (A2 Pen), B1, C1, E2, F1	Pen	Index 3/50i/75	Pen				Y	Y
Class 1	A1, A2, B1, C1, E1 & F1		Index 3/50i/75	Y	10	9.4	IFR	Y	Y
	A1, A2, B1, C1, E2 & F1		Index 3/5/60	Y	22			Y	Y
	A1, B2, C2, F2		Index 3/25/60	Y	32	29		Y	Y
			Index 3/50i/75						
	A1, A2, B1 & C1	Y	Index 3/50i/75		7.1		CL 1		
Class 1	A1, A2, B1, C1, E1 & F1	Y	Index 3/50i/75	Y			CL 1		
Class 1	A1, A2, B1, C1, E2 & F1		Index 3/50i/75	Y	9.6	8.2	CL 1		
Class 1	A1, A2, B1, C1, E2 & F1		Index 3/50i/75				CL 1		
Class 1	A1, A2, B1, C1, E2 & F1		Index 3/50i/75				CL 1		
Class 2	A1, A2, B1, C1, E3 & F1		Index 3/50i/75				CL 1		
Class 2	A1, A2, B1, C1, E3 & F1		Index 3/50i/75		20.4		CL 1		
Class 1	A1, A2, B1, C1, E1 & F1		index 3/50i/75						
Class 1	A1, B1, C1, E1 & F1		index 3/50i/75						
Class 1	A1, A2, B1, C1, E2 & F1		index 3/50i/75		10.3	8.1	CL1		

HEAD OFFICE (UK)

Carrington Textiles
Market Street
Adlington
Lancashire
PR7 4HJ

Tel: +44 (0)1257 476850
Fax: +44 (0)1257 476852
Email: info@carrington.co.uk

CERTIFICATES

For more information please visit:

WWW.CARRINGTON.CO.UK

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