



**PROTECTIVE
WEAR**
laminated
fabrics



KLOPMAN
INTERNATIONAL

QUALITY THAT WORKS

High-performance protective fabrics

Klopman fabrics are developed to offer exceptional protection, durability and consistency. Fabrics aimed to withstand repeated high-temperature industrial laundering. Fabrics manufactured with the highest quality standards. And most of all, fabrics developed specifically so that the wearer can work at the highest level of comfort, health and safety.





Klopman laminated fabrics

Klopman's laminated fabrics consist of two or more layers of textiles and components bonded together to guarantee the wearer better protection, breathability and, in the case of the softshell, warmth.

Laminated fabrics are widely used in high-performance apparel where fabrics need to be waterproof yet breathable. They are also chosen in the protective wear market for all applications where flame-retardant properties, as well as foul weather protection, are vital for the end user.

Our laminated fabrics are used to make garments for all sorts of uses, including:

PPE and technical apparel (including flame-retardant and high-visibility clothing)

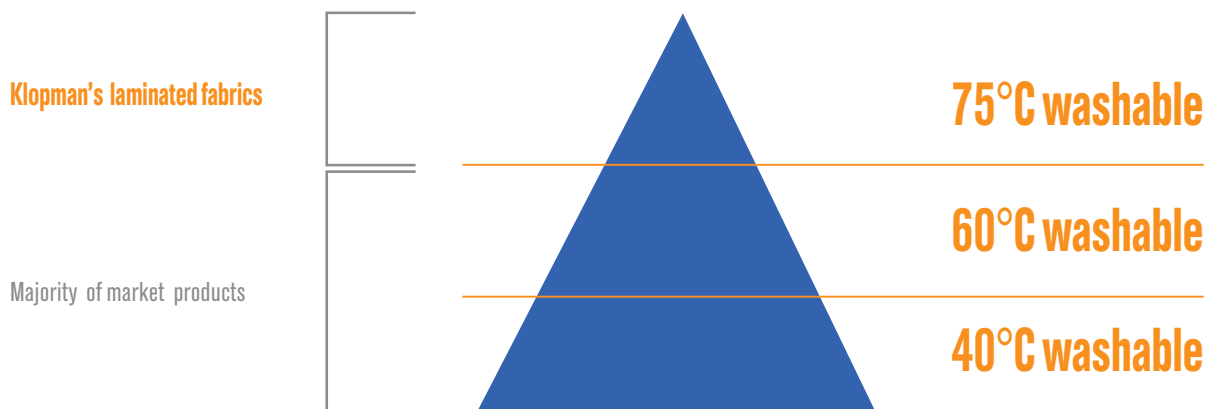
Workwear and uniforms

Sports and leisure.

Industrially launderable

All our products are industrially launderable - to an unrivalled level. Most of the fabrics in the market are washable to only 40°C, at best a maximum of 60°C.

Klopman laminated fabrics, however, can be repeatedly **washed for a minimum of 30 cycles at 75°C** without any delamination or leakage (ISO 15797 Method 8).



Waterproof, windproof and breathable

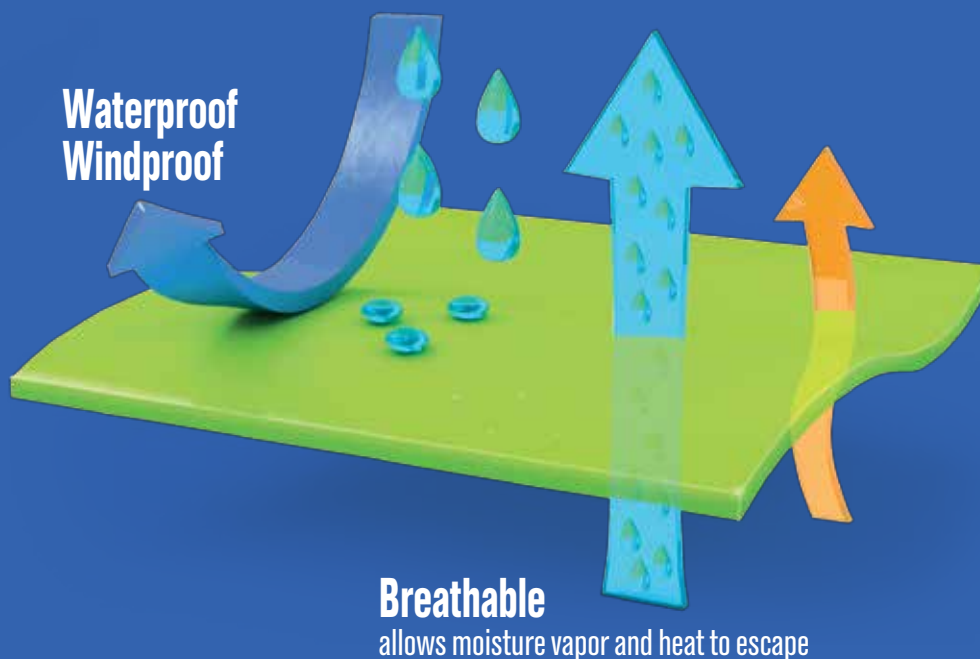
Klopman laminated fabrics provide proper protection from wind and rain. They prevent the penetration and absorption of water drops from the outside, but still allow water vapour molecules to pass through the membrane from the inside. So the wearer remains dry and comfortable throughout the working day.

Klopman laminated fabrics fulfil the norm **EN 343 Class 3 / Class 3**, the highest class in water tightness and water vapour resistance.

Softshell version

Klopman's laminated fabrics are also available in softshell version. Our softshell fabrics retain those all-important waterproof and windproof properties, are easy-care, and are made to be extra-soft and comfortable.

They also provide particularly impressive insulation to keep the wearer warm in cold climates, or give high levels of protection against heat, flame and electric arc in the flame-retardant version.



Flame-retardant

Klopman laminated fabrics are also available in flame-retardant versions.

Fabrics that ensure protection against heat and flame (ISO 11612), electric arc (EN 61482), welding (ISO 11611), antistatic (EN 1149-5) and chemical splash (EN13034 Type 6), together with the foul weather protection (EN 343 Class 3/Class 3), are available in a laminated fabric and as a softshell solution.

Popular fabrics which offer all of these protective qualities include the latest **K-Flame Pro 175 2-Layer Laminate**, **K-Flame Xtra 245 2-Layer Laminate** and **K-Flame Xtra 245 Softshell fabrics**.

The two-layer laminates are based on a lightweight, inherently flame-retardant fabric and a waterproof, windproof and breathable membrane, which combine to create a multiple risk protection fabric with foul weather properties.

The softshell version, based on three components (K-Flame Xtra 245, membrane and flame-retardant fleece), ensures a higher level of protection against electric arc but without compromising the design. The single-sewing construction offers a more modern, appealing look for workers, where image is a priority.

High visibility

Our laminated fabrics are also available in yellow and orange high-visibility, certified to EN ISO 20471.

Our high-visibility fabrics increase protection levels for workers operating in low-light and/or potentially hazardous conditions, thanks to the superior luminosity and brightness of the colours.



WATERPROOF



BREATHABLE



WINDPROOF



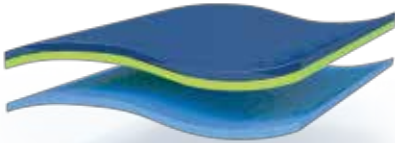
INDUSTRIALLY
LAUNDERABLE



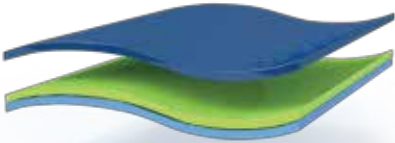
FLAME RETARDANT

More flexible than ever!

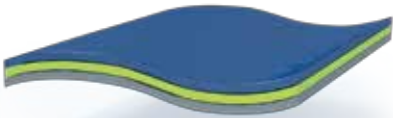
Klopman fabrics are laminated with a 100% polyurethane membrane. This can be handled in three different ways. The laminated fabric can be used as the outer layer or as a lining laminate. The fabric can also be provided as softshell fabric with a knit or fleece as a backing, making it supremely comfortable to wear in direct contact with the skin.



2 layers (EN 343)



2 layers (EN 343)



3 layers softshell



Outer layer: fabric such as Tribeca, Starfield, Megatec 300, K-Flame Xtra 245, K- Flame Pro 175



Lining: lightweight fabric such as Megatec K or Concept



High performance membrane



Knit or fleece

Klopman's laminated range

Every fabric in the Klopman range can be laminated. The table below describes the protective qualities of our fabrics currently in production.

FABRIC	DESCRIPTION	WEIGHT	CERTIFICATION FULFILMENTS	WASHING RECOMMENDATIONS
Tribeca 2L	2 layer laminate waterproof windproof breathable	160 g/m ² ±5%	EN 343 class 3 / class 3 EN ISO 20471 (High Visibility yellow and orange)	
Starfield 2L	2 layer laminate waterproof windproof breathable	285 g/m ² ±5%	EN 343 class 3/class 3	
K-Flame Pro 175 2L	2 layer laminate waterproof windproof breathable	210 g/m ² ±5%	ISO EN 11612 A1 B1 C1 F1 EN 1149-5 EN 13034 (type 6) * EN 343 class 3 / class 3 EN ISO 20471 (High visibility yellow)	
K-Flame Xtra 245 2L	2 layer laminate waterproof windproof breathable flame retardant	280 g/m ² ±5%	EN ISO 11612 A1 A2 B1 C1 E1 F1 ISO 11611 Class 1 IEC 61482-2 Class 1 (4kA) EN 1149-5 EN 13034 (type 6)* EN 343 class 3 / class 3	
K-Flame Xtra 245 Softshell	Softshell 3 layer laminate water repellent windproof breathable flame retardant	515 g/m ² ±5%	EN ISO 11612 A1 A2 B1 C1 E1 F1 ISO 11611 Class 1 IEC 61482-2 Class 2 (7kA) * EN 1149-5 EN 13034 (type 6)*	
Megatec 300N 2L*	2 layer laminate waterproof windproof breathable flame retardant	320 g/m ² ±5%	EN ISO 11612 A1 A2 B1 C1 E3 F1 EN ISO 11611 class 1 A1 A2 EN 1149-5 IEC 61482-2, Class 1 (4 kA) EN 343 class 3/class 3 EN 13034 (type 6) * EN ISO 20471 (High Visibility yellow)	
Megatec 300N Softshell*	Softshell 3 layer laminate water repellent windproof breathable flame retardant	545 g/m ² ±5%	EN ISO 11612 A1 A2 B1 C1 E3 F1 EN ISO 11611 class 1 A1 EN 1149-5 IEC 61482-2, Class 2 (7 kA) * EN 13034 (type 6) * EN ISO 20471 (High Visibility yellow)	

*Technical data sheet in development - might be subject to changes



To arrange a product presentation or to request samples visit www.klopman.com
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