



# The revolutionary new range of protective clothing solutions from Waxman Fibres



For over a decade Waxman Fibres and our partners have successfully introduced and provided our branded Protex products to international markets which include major utilities, civil engineering, construction and petrochemical companies.

Now, with a new super high performance type Protex fibre, Waxman Fibres introduces a new range of solutions from general flame retardant workwear to very high performance niche applications. Welcome to the Protal family of products.

Protal is the result of many years of intensive research and development by the Waxman Fibres' technical team and is in response to some of the biggest end users' requests for the next generation of protective clothing.

This brand new innovative range of fabrics doesn't just offer different levels of protection against hazards like flame, arcing and metal splash. Thanks to ground-breaking technology, it also does the equally tough job of remaining comfortable and cooler thanks to breathable properties previously impossible in this type of protective clothing.

Waxman Fibres' uniquely balanced blend of Protex fibre, So FR viscose and other technical fibres produce an inherently flame retardant fabric range that's strong, extremely durable, yet lightweight, flexible and breathable. Protal is a truly world-class new product from the world's experts in flame retardant fibres and blends.



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[Terms & Conditions](#)



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Performance Standard	Protal 1 210gsm	Protal 1 240gsm	Protal 1 270gsm	Protal 1 320gsm	Protal 5 195gsm
<b>EN 61482-1-1 / ASTM F1959</b> Determination of the arc rating (ATPV or EBT50) of flame resistant materials for clothing (Open Arc). Test measures the maximum incident thermal energy in units of energy per surface area (cal/cm <sup>2</sup> ) that a fabric can support before there is a 50% probability of a second degree burn  <b>Used as test methods for IEC 61482-2 and NFPA 70E</b>	7.0 cal/cm2  HRC 1	9.6 cal/cm2  HRC 2	11.0 cal/cm2  HRC 2	15.0 cal/cm2  HRC 2	7.0 cal/cm2  HRC 1
<b>EN 61482-1-2 Determination of arc protection class of material and clothing by using a constrained and directed arc (Box Test).</b> This test measures the protective performance of clothing and fabrics by exposing them to an electric arc confined in a specific box with a specific electrode arrangement: - to pass, the heat transferred behind the fabric must not cause second degree burns. There are two class levels: Class 1 - Arc current of 4kA Class 2 - Arc current 7kA.	Class 1	Class 1	Class 1	Class 1	Class 1
<b>EN ISO 11612 Protective clothing. Clothing to protect against heat and flame</b> The purpose of this Standard is to provide minimum performance requirements for clothing to protect against heat and flame, which could be worn for a wide range of end uses.  With the many heat and flame hazards listed in this Standard there are performance levels which garments are rated to. Note all garments must be tested for flame spread A1 and at least one other heat hazard:  Limited flame Spread: Code Letter A1 and option A2 Convective Heat: Code Letter B1, 2 or 3 Radiant Heat: Code Letter C1, 2, 3 or 4 Molten Aluminium Splash: Code Letter D1, 2 or 3 Molten Iron Splash: Code Letter E1, 2 or 3 Contact Heat: Code Letter F1, 2 or 3	A1 B1 C1 F1	A1 B1 C1 E1 F1	A1 B1 C1 E1 F1	A1 B1 C1 E3 F1	A1 A2 B1 C1 F1



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<b>NFPA 2112 Standard on Flame-Resistant Garments for Protection of Industrial personnel against Flash Fire</b>	Protal 5 is the targeted fabric for this test as it complies at all fabric weight ranges. At 195 gsm Body Burns are less than 25%				
<b>EN ISO 11611 Protective clothing for use in welding and allied processes</b>  This standard specifies minimum safety requirements and test methods for protective clothing that are to be worn during welding and allied processes. This type of protective clothing is intended to protect the wearer against short contact time with flame, radiant heat and against spatter (small splashes of molten metal)  There are two classes with specific performance requirements  Class 1 (the lower level) protection against less hazardous welding techniques and situations, causing lower levels of radiant heat and spatter  Class 2 (the higher level) protection against more hazardous welding techniques and situations, causing higher levels of radiant heat and spatter.	--	A1 Class 1	A1 Class 1	A1 Class 1+2	A1+A2 Class 1
<b>EN 14116 Protective clothing — Protection against heat and flame — Limited flame spread materials, material assemblies and clothing</b>  This standard is for flame spread testing only, unlike EN 11612 it has no further heat testing. There are three levels of FR protection, Index 1, 2 and 3. Index one is where the materials can melt and form a hole. Index 1 materials cannot therefore come in contact with the skin because of the hole formation, and must be worn over index 2 or 3 fabrics which are not allowed to form a hole. Index 3 fabrics are the top performing fabrics and have the same performance as EN 11612 FR fabrics for flame spread	Index 3	Index 3	Index 3	Index 3	Index 3
<b>EN 20471 High visibility clothing — Test methods and requirements</b>  The standard specified for professional high visibility workwear using HV colours Yellow, Orange and Red	HV Yellow	HV Yellow	HV Yellow	HV Yellow	HV Yellow HV Red and Orange achieved through constructional weaves



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<p><b>EN 1149-5 Protective clothing. Electrostatic properties. Material performance and design requirements</b></p> <p>Specifies materials and design requirements for electrostatic dissipative protective clothing, used as part of a total earthed system, to avoid incendiary discharges.</p> <p>A garment complying with EN1149-5 should be made of materials that meets either of the following test method standards: -</p> <p><u>EN 1149-1</u> – measurement of surface resistivity</p> <p><u>EN 1149-3</u> – measurement of charge decay</p> <p>A dangerous consequence of the electrostatic potential on a charged person is that it can be high enough to cause hazardous spark discharges. The control of undesirable static electricity on people is necessary in areas where flammable or explosive atmosphere exist or might be present, in such cases people have to be earthed.</p> <p>The basis of EN 1149-5 was obtained through research by the European Commission. The research work comprised ignition testing in hydrogen atmospheres. This research showed that Method 2 of EN 1149-3 has been proven to accurately predict incendiary behaviour of fabrics.</p>	Complies with EN1149-3	Complies with EN1149-3	Complies with EN1149-3	Complies with EN1149-3	Complies with EN1149-3
<p><b>EN 343 Protective Clothing – Protection against Rain</b></p> <p>Standard evaluates materials and seams and assess the class level for water proofness and water vapour resistance. Both have a class rating, with Class 3 being the highest performing and 1 the lowest.</p>	Class 3:3	Class 3:3	Class 3:3	Class 3:3	Class 3:3
<p><b>EN 13034 Performance requirements for chemical protective clothing offering limited protective performance against liquid chemicals (Type 6 and Type PB[6] equipment)</b></p> <p>Garments suitable for this standard are those that are intended to be worn where the risk has been identified as low and a full liquid permeation barrier is not necessary.</p> <p>These garments provide the lowest level of chemical protection and are intended to protect against small quantities of splashes or spray. Chemical protective suits should cover the trunk and limbs in a one or two piece suit with or without a hood, boot cover or boot socks.</p> <p>The standard specifies fabric performance requirements and additionally the whole suit must undergo a spray (mist) test.</p>	Complies with EN 13034	Complies with EN 13034	Complies with EN 13034	Complies with EN 13034	Complies with EN 13034



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