

ELLIOTTS  QUALITY
SAFETY
GEAR

FURNACE



Certified System

Quality
ISO 9001
SAI GLOBAL

50 *Years*
1966 - 2016

50 *Years*

of CARE without Compromise

Elliotts are a successful manufacturer and supplier of quality safety gear throughout Australasian markets. Our reputation for care has been built over 50 years of commitment to looking beyond commercial considerations to that which matters most, the protection you need to stay safe. That commitment to care is stronger today than it has ever been and our growth and success is the consequence of this abiding focus.

Our passion for quality and reliable service is matched by world class partnerships and a never-ending quest for the most innovative safety and care technologies available, wherever they are and before you know you need them.

Elliotts quality Personal Protective Clothing (PPC) and Personal Protective Equipment (PPE) are proven on-the-job every day. They are specified routinely for and by workers in metal, petrochemical, mining, emergency services, construction and other industries where hazards exist. These reliable and popular products are part of a comprehensive range evolved over time and based on the common foundation of quality and care for which the company has built its reputation.

Elliotts quality safety gear allows you to take care in any situation.

Recognised as experts in foundry protective clothing

Elliotts have been designing and manufacturing protective clothing for foundry workers since the 1960's. Our Australian based Design and Development Team are constantly creating new and bespoke garments utilising the latest in fabric technologies from around the world.

If one of our standard products does not suit your needs, we can design and manufacture a bespoke garment that provides the protection you need.



Testing to International Standards

Foundries are very hazardous environments where protective clothing can mean the difference between keeping your workers safe, or potentially exposing them to serious injury or death with untested clothing. Is your protective clothing up to standard?

Elliotts are committed to providing the best protective solutions that meet and exceed international industry standards. We have invested in testing our products externally by an independent test house to ensure our products are manufactured to meet the requirements of relevant Australian or International standards where possible.

Specialist Safety Advice

Our experienced Regional Managers can visit your site and assist in identifying what type of protection is the most suitable for your specific circumstances. We can provide sample materials if required for you to conduct your own tests to help you select the most suitable fabrics combinations.



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WHAT IS FOUNDRY WORK?

The Foundry industry dates back to 1480, when Vannoccio Biringuccio (1480-1539) first documented the foundry process in writing. In the 550 years since then, this industry has made many technological leaps and bounds, but the basic concepts of the industry are still the same.

Foundry work involves casting molten metal into a mould. Casting can be done manually by static casting or automatically by injection, die, continuous, spin or spray casting. A typical process includes preparing a mould for casting, melting, pouring metal into the mould, and removing and finishing the casting.

There are two types of foundries. Ferrous foundries produce iron and steel castings. Non-ferrous foundries produce castings of copper-based alloys (brass, bronze and copper), aluminium-based alloys (lead, zinc, nickel, magnesium) and other alloys.



WHAT ARE THE RISKS?

Working in a foundry presents a range of work health and safety risks including:

- Explosions and burns from molten metal and other hot materials
- Heat stress, heat stroke and fatigue from hot working conditions
- Respiratory effects from exposure to gases, vapours, fumes and dusts
- Skin effects from contact with corrosive or sensitising chemicals
- Eye damage from light radiation, metal fragments, dusts and chemical splashes
- Slips, trips and falls
- Joint, muscle sprains and strains
- Physical injuries from machinery and equipment e.g. by entanglement or crushing
- Health effects from machinery and equipment e.g. caused by vibration and noise

Molten Metal Explosions

- Steam explosions - Steam explosions are caused by introducing moisture into molten metal or by pouring molten metal onto materials containing moisture.
- Chemical Explosions - Chemical explosions can occur by introducing reactive chemical substances to molten metal directly or as a contaminant in charge material, causing gas pressure build-up within the molten metal.



Burns

Burns are a major source of injury in molten metal foundries and are generally caused by touching hot surfaces, radiation or splashing molten metal.

Heat Stress

Working in hot conditions can be hazardous to health. Effects range from discomfort or heat rash to heat exhaustion or heat stroke which can cause permanent injury or death. Heat stress can occur without the worker being aware of how much they are affected until it is almost too late. It affects concentration, perception and decision making, which can negatively affect behaviour and judgement.

Other factors besides furnace heat contribute to the body overheating for example:

- Excessive or unsafe clothing
- Unsuitable personal protective equipment (PPE)
- Job factors including strenuous work, sustained work and inadequate recovery time
- Seasonal factors including high air temperature and relative humidity, or low air movement
- Fatigue

Light Radiation

Eye disorders and skin burns may be caused by intense ultraviolet and infrared radiation from molten metal in furnaces, particularly around pouring areas and in welding operations.

Hazardous Chemicals

Foundry workers may be exposed to hazards and risks from a range of hazardous chemicals.

Physical Hazards

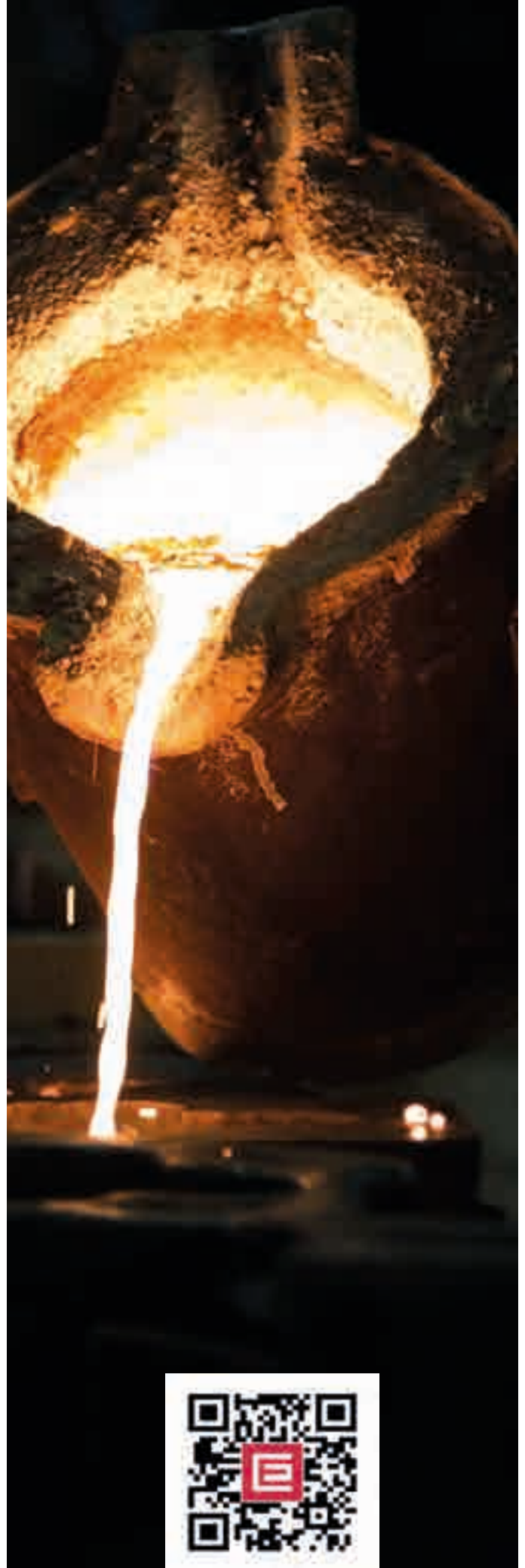
Physical hazards are properties of chemicals created from chemical reactions. They can present a risk through incorrect handling or use and can often cause injury to people or damage to property. Examples include chemicals which are flammable, corrosive, explosive, or have oxidising properties.

One of the biggest potential hazards in foundries is from physical hazards posed by some hazardous chemicals. Fires and explosions at foundries have caused deaths and substantial property damage.

Health Hazards

Health hazards are properties of a chemical which can potentially cause adverse health effects. Exposure occurs by inhaling, skin contact or ingesting the chemical.

Further information can be sourced at www.elliotts.net



TYPES OF PROTECTIVE CLOTHING AND PPE



Protective clothing used for foundry work can be categorised into two types, Primary Protective Clothing and Secondary Protective Clothing.

PRIMARY PROTECTIVE CLOTHING



Primary protective clothing is used for specific hazardous tasks, and then removed. Foundry work such as charging, taping and pouring molten metal can expose workers to dangerous thermal hazards and burn injuries and primary protective clothing is the first line of defence against molten metal splash and other foundry hazards. It is the outer layer of a personal protective equipment (PPE) system. Garments such as jackets, coats, hoods, full-body approach suits, pants, coveralls, leggings, overshoes and spats can be combined to obtain the level of protection needed for the task at hand.

The garments should be made from a range of specific fabrics depending on the particular hazards. There are various fabrics available many are aluminized, however, there are some non-aluminized options available.

Aluminised

Aluminised fabrics are a combination of a base fabric finished with an aluminised film or coating. They are specifically designed for protective clothing used in environments that pose serious fire risk or safety hazards associated with hot works or radiant heat sources and molten metal splash.

Non - Aluminised

There are several fabrics available that are specifically designed to provide protection from molten metal splash. Fabrics include CarbonX Repel and WeldWool.



SECONDARY PROTECTIVE CLOTHING



Secondary protective clothing is all-day or everyday clothing and is the last line of defence for the body should the primary protective clothing fail. Ideally, the clothing should be flame-resistant and the selection criteria should be based on primarily protection followed by comfort and then value. Historically heavy cotton fabrics (non-flame resistant) have been the minimum standard, however there are now various FR Fabrics available including high performance specialty blends for specific applications.

There are two types of fire-resistant (FR) fabrics used in Secondary Protective Clothing:

Treated FR Fabrics

Treated FR fabrics are created by applying a flame-retardant chemical finish to a fabric or by adding a chemical treatment to the fibres before they are woven or knitted into the fabric. The chemicals form a strong bond with the polymer chain that is difficult to remove by washing when the recommended laundering instructions are followed accurately.

Inherent FR Fabrics


Inherent FR fabrics are made of fibres in which the FR properties are naturally part of the polymer backbone and can never be worn away or washed out. The actual structure of the fibre itself is non-flammable; therefore, the flame resistance is permanent.

Clothing Design






Clothing should be designed to withstand exposure to flame and shed molten metal quickly and effectively. Badly fitted garments can create folds that catch and hold the metal, making them less protective. The design of garment is also important, for example pockets and flaps create catch points, metal buttons heat up from radiant heat and reflective tape can stop the fabric breathing and cause sweat and burn marks if not placed well on a garment.

PPE IN THE FOUNDRY



	PRIMARY PPE for molten metal work, in addition to secondary PPE	SECONDARY PPE for general foundry work
HEAD	Use helmets where there is potential for items to fall from a height or where work takes place above head height, for example on a mezzanine. Industrial safety helmets should be considered. Where tasks result in dust or particulates, a head covering should be considered.	
		
EARS	The choice of hearing protection should consider level of occupational noise, the wearer, for example personal characteristics, comfort, communication requirements, and compatibility with the job and workplace. Guidance on hearing protectors is provided in AS/NZS 1269.3 Acoustics: Hearing Conservation	
EYES AND FACE	Face shields with neck protection.	Industrial safety glasses with side shields are the minimum.
		
RESPIRATORY	The type of respirator selected should consider: the operator and physiological and psychological factors - facial hair should not be allowed; the task and how the job is done, duration, frequency; and the substance - type of contaminant, concentration. Guidance can be sourced from suppliers of respiratory protective equipment and AS/NZS 1716 Respiratory protective devices.	

Reference Safe Work Australia "Guide to managing risks associated with foundry work" April 2013

	PRIMARY PPE for molten metal work, in addition to secondary PPE	SECONDARY PPE for general foundry work
TRUNKS AND ARMS	<p>A jacket of leather or other suitably resistant material must be worn outside other clothing. It must be free of features, for example cuffs and pockets may trap molten metal. It must be worn properly and fastened every time.</p> 	<p>Long-sleeved shirt made from flame-resistant fabric, for example wool, heavy cotton drill. Garments should fasten at the neck and wrists to prevent molten metal splashes, dust, chemicals and other substances from entering through the collar and cuffs.</p> 
HANDS	<p>Heat-resistant Kevlar or heavy leather gauntlets covering the lower part of arm.</p> 	<p>Gloves selected should take into account the: hazard, for example burns, abrasion, chemicals and cuts; work environment; and the wearer, for example fit, comfort and dexterity. Guidance on the selection, use and maintenance of protective gloves is provided in AS/NZS 2161.1 Industrial Safety Gloves and Mittens</p> 
LEGS	<p>Where risk of molten metal spills or splashes exists, trousers of leather or other suitably resistant materials must be worn. The trousers should cover the top of the footwear and be free of features, for example cuffs and pockets could trap molten metal.</p> 	<p>Heat-resistant trousers.</p> 
FEET	<p>Workers should always wear safety footwear in the workplace, unless there are sound medical reasons, for example if wearing safety footwear would injure the wearer. In such cases, the reason for such an opinion should be given and the most effective alternative protective equipment sought.</p>	


STANDARDS



The international standard most commonly used around the world for protective clothing for furnace operators is ISO 11612 Protective clothing - Clothing to protect against heat and flame.

This International Standard specifies performance requirements for protective clothing made from materials, which are designed to protect the wearer's body, except the hands, from heat and/or flame. For protection of the wearer's head and feet, the only items of protective clothing falling within the scope of this International Standard are gaiters, leggings, hoods, and overboots. However, concerning hoods, requirements for visors and respiratory equipment are not given.

The performance requirements set out in this International Standard are applicable to protective clothing which could be worn for a wide range of end uses, where there is a need for clothing with limited flame spread properties and where the user can be exposed to radiant, convective, contact heat and/or to molten metal splashes.

<p>ISO 11612:2015</p>  <p>A1 or A1+ A2, B(x), C(x), D(x), E(x), F(x)</p>	<p>This Standard defines the minimum requirements for clothing for protection against heat and flames</p> <ul style="list-style-type: none"> • Clothing must be supplied with user information from the manufacturer • Code A must be complied with • At least one of the heat transmission performance codes B-F must be met.
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CODE	TEST METHOD	PROTECTION AGAINST	PERFORMANCE LEVEL	MINIMUM REQUIREMENT
A	ISO 15025 Procedure A ISO 15025 Procedure B	Limited Flame Spread – Face Ignition Limited Flame Spread – Edge Ignition	A1 OR (A1 AND A2)	Pass
B	ISO 9151	Convective Heat	B1 to B3	B1
C	ISO 6942	Radiant Heat	C1 to C4	C1
D	ISO 9185	Molten Aluminium Splash	D1 to D3	D1
E	ISO 9185	Molten Iron Splash	E1 to E3	E1
F	ISO 12127-1	Contact Heat	F1 to F3	F1

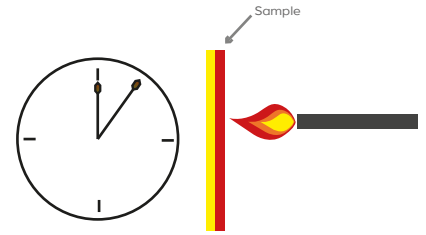
Physical requirements including Tensile Strength, Tear Strength, and Seam strength must also be tested independently.



CODE A. Flame propagation (ISO 15025 method A)

Sample is exposed to flame for 10 seconds then removed

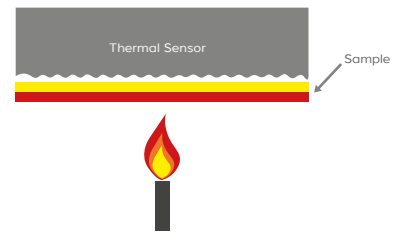
	bad	good	best
Performance level	X	A1	A2
Average value of flame persistence ≤ 2 s	Test not passed	Test PASSED	Test PASSED
Average value of residual incandescence ≤ 2 s			



CODE B. Convective heat (ISO 9151)

Temperature increase behind sample is measured

		worst		best
Performance level		B1	B2	B3
Heat Transmission Index - HTI (seconds)	min	4	10	20
	max	<10	<20	

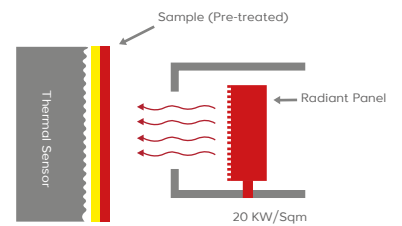


HTI = Average of HTI₁₂ and HTI₂₄ HTI₁₂ = Time to increase temperature by 12°C
 HTI₂₄ = Time to increase temperature by 24°C

CODE C. Radiant heat (ISO 6942 method B)

Temperature increase behind sample is measured

		worst			best
Performance level		C1	C2	C3	C4
Heat transfer t ₂₄ (seconds)	min	7	20	50	95
	max	<20	<50	<95	

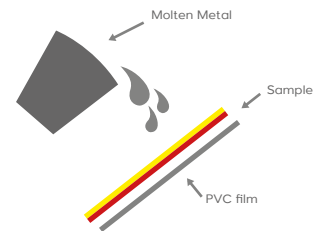


T₂₄ = Time to increase temperature by 24°C

CODE D. Splashes of molten aluminum (ISO 9185)

Quantity necessary to damage PVC film is measured

		worst		best
Performance level		D1	D2	D3
Molten metal weight (grams)	min	100	200	350
	max	<200	<350	

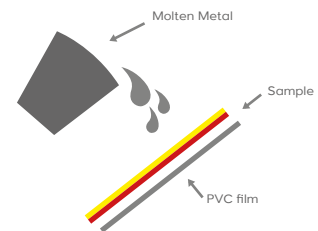


Molten Aluminum at 780°C (+/- 20°C) (1436°F) PVC film simulates human skin

CODE E. Splashes of molten cast-iron (ISO 9185)

Quantity necessary to damage PVC film is measured

		worst		best
Performance level		E1	E2	E3
Molten metal wight (grams)	min	60	120	200
	max	<120	<200	

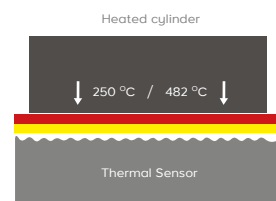


Molten Cast-Iron at 1400°C (+/- 20°C) (2552°F) PVC film simulates human skin

CODE F. Contact heat (ISO 12127)

Heat transmission is measured

		worst		best
Performance level		F1	F2	F3
Threshold time (seconds)	min	5	10	15
	max	<10	<15	



Threshold time = time necessary to increase temperature by 10°C

Visit www.elliotts.net for more detailed explanations on these test methods

FABRIC & PERFORMANCE



Aluminised Fabrics

Unlined

Single layer Aluminised Fabric only.

SERIES	FABRIC	ALUMINISED TECHNOLOGY	WEIGHT
CX407	Carbon X	Z-Flex	407 gm2
CA340	Aluminised carbon / Aramid	Reflespace	340 gm2
CA515	Aluminised carbon / Aramid	Reflespace	515 gm2
PR720	Aluminised Preox (Pre-oxidised acrylic)	TBA	720 gms
AR530	Aluminised Aramid	TBA	530 gms



Lined

Aluminised Fabric with T-Gard® P190 thermal liner.

SERIES	FABRIC	WEIGHT
CA340L	Aluminised CA340/ T-Gard P190	340 gm2 + 430gsm = 770gsm
CA515L	Aluminised CA515/ T-Gard P190	515 gm2 + 430gsm = 945gsm
PR720L	Aluminised PR720/ T-Gard P190	720 gms + 430gsm = 1150gsm
AR530L	Aluminised AR530/ T-Gard P190	530 gms + 430gsm = 960gsm



Non Aluminised Fabrics

Single layer Aluminised Fabric only.

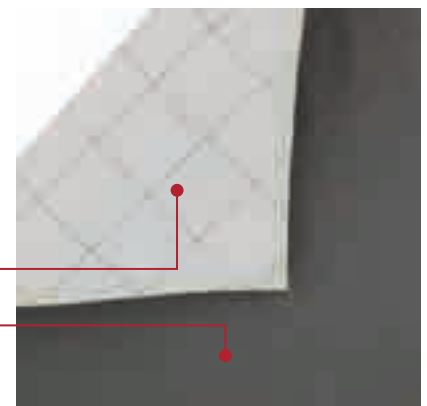
SERIES	DETAILS	WEIGHT
WELDWOL	100% Wool	780gm2
OASIS	Replel	410gms
PR97	Merino wool and Lenzing FR®	380gm2
CarbonX Repel	CarbonX with encapsulation	320gm2



Liner Fabric

The T-Gard P190 Thermal Liner has been specifically designed for Furnace PPE and is exclusive to Elliotts. T-Gard® P190 is light weight and offers excellent thermal protection. The face fabric is a Proban FR 100% Cotton which provides a comfortable FR material against the body that can easily wick away moisture. The thermal batting is a 100% Nomex.

100% Nomex
Proban FR 100% Cotton



Fabric Performance

Unlined

SERIES	LIMITED FLAME SPREAD FACE IGNITION CODE A1 (OUTER FABRIC)	LIMITED FLAME SPREAD EDGE IGNITION CODE A2	CONVECTIVE HEAT CODE B	RADIANT HEAT CODE C	MOLTEN ALUMINIUM SPLASH CODE D	MOLTEN IRON SPLASH CODE E	CONTACT HEAT CODE F
CX407	A1 Pass	A2 Pass	B1 7.2s	C4 190s	NT	E3 >200g	F1 8.0s
CA340	A1	NT	B1 7.4s	C3 54.4s	D3 >350g	E3 >200g	F0 4.9s
CA515	A1	NT	B1 7.4s	C3 62.2s	D3 >350g	E3 >200g	F1 5.9s
PR720	A1	NT	B1 6.9s	C3 66.0s	D3 >350g	E3 >200g	F1 8.8s
AR530	NT	NT	NT	NT	NT	NT	NT

• NT – No test data available on AR530

Lined

SERIES	LIMITED FLAME SPREAD FACE IGNITION CODE A1 (OUTER FABRIC)	LIMITED FLAME SPREAD FACE IGNITION CODE A1 (LINING FABRIC)	LIMITED FLAME SPREAD EDGE IGNITION CODE A2	CONVECTIVE HEAT CODE B	RADIANT HEAT CODE C	MOLTEN ALUMINIUM SPLASH CODE D	MOLTEN IRON SPLASH CODE E	CONTACT HEAT CODE F
CA340L	A1 Pass	A1 Pass	A2 Pass	B2 15.2s	C4 165.7s	D3 >350g	E3 >200g	F3 16.7s
CA515L	A1 Pass	A1 Pass	A2 Pass	B2 15.9s	C4 106.6s	D3 >350g	E3 >200g	F3 16.2s
PR720L	A1 Pass	A1 Pass	A2 Pass	B2 15.8s	C4 186.2s	D3 >350g	E3 >200g	F3 15.4s
AR530L	A1 Pass	A1 Pass	A2 Pass	B3 21.3s	C4 215.9s	NT	NT	F3 20.1s

• NT – No test data available on AR530

Fabric System Evaluation

Heat Protection



Convective Heat	Unlined	CA340	CA515	CX407	PR720	AR530 (NT)
	Lined	AR530L	CA515L	PR720L	CA340L	
Radiant Heat	Unlined	CX407	PR720	CA515	CA340	
	Lined	AR530L	PR720L	CA340L	CA515L	
Contact Heat	Unlined	PR720	CX407	CA515	CA340	AR530 (NT)
	Lined	AR530L	CA340L	CA515L	PR720L	

Molten Aluminum and Iron Splash

Molten Aluminum Splash	All Fabrics achieved the highest possible rating of D3 and are suitable for Molten Aluminium Splash
Molten Iron Splash	All Fabrics achieved the highest possible rating of E3 and are suitable for Molten Iron Splash

• NT – No test data available on AR530 and AR530L

Comfort - Weight



Weight	Unlined	CA340	CX407	CA515	AR530	PR720
	Lined	CA340	CA515	AR530	PR720	

Comfort - Flexibility



Flexibility	Unlined	CX407	CA340	CA515	PR720	AR530
	Lined	CA340	CA515	PR720	AR530	

DESIGN AND PERFORMANCE



Heat stress and molten metal accidents are a serious threat to the safety of foundry workers. PPE designed to protect foundry workers against heat and molten metal splash can save workers from disabling or potentially fatal burns and injuries. Elliotts have been designing and manufacturing protective clothing for foundries for over 40 years, our range and designs offer different balances across the following four key aspects.

Protection

- **Flame Resistance** - Protective clothing must be made of fabric that is flame resistant so that it will not ignite and continue to burn after the heat source is removed. Additionally, FR fabrics should shield the wearer from second- and third-degree burns as much as possible. EN ISO 11612 Protective clothing - Clothing to protect against heat and flame measures the performance of fabrics in relation to flame resistance.
- **Ability to shed molten metal** - The fabric must demonstrate the ability to shed molten metal from its surface without sticking. This performance of the fabric is greatly dependent on the type of molten metal. EN ISO 11612 Protective clothing - Clothing to protect against heat and flame measures the performance of fabrics in relation to flame resistance.

Comfort

Foundries are extremely hot environments and in most situations the risks dictate that Primary Protective Clothing must be worn. While protection is critical, managing the wearer's comfort and limiting the possibility of heat stress can be assisted by considering the following:

- **Design** - The design should ensure ease of donning and doffing, allow maximum freedom of movement and where possible use rear openings or vents to increase air exchange to better manage heat loss. However protective clothing manufactured to meet the requirements of ISO 11612 must comply with specific design requirements including minimum overlap of garments, quick release fastening, specific pockets and closures, no cuff turn ups and much more.
- **Weight** - Dependant on the protection level required, fabric weight and the amount of fabric used should be kept to a minimum to keep the weight of the garment as light as possible. Heavy garments are not only uncomfortable for the wearer but can lead to fatigue and reduced productivity.
- **Flexibility** - Different fabrics offer different levels of flexibility or suppleness which can affect the ease of movement and therefore flexibility of a garment. Stiff and inflexible garments are not only uncomfortable for the wearer but can also lead to fatigue and reduced productivity.

Durability/ Life Cycle

Choosing the most suitable garment design and fabric combination for the specific application will help provide the appropriate protection but also maximise the life of the garment. Educating the wearer about how and in what applications the garment should be utilised, what protection it will provide and how to care and maintain the garment can improve risk management and improve the life of the PPE.

Standards Compliance

Foundry work such as charging, taping and pouring molten metal can expose workers to dangerous thermal hazards and burn injuries. PPE designed to protect foundry workers should be made to a standard. Elliotts range of Foundry PPE is either manufactured to meet the requirements of 11612 Protective clothing - Clothing to protect against heat and flame and or is made of materials independently tested to meet the standard.

ISO 11612



A1 or A1 + A2, B(x), C(x), D(x), E(x), F(x)





GARMENT DESIGN OPTIONS



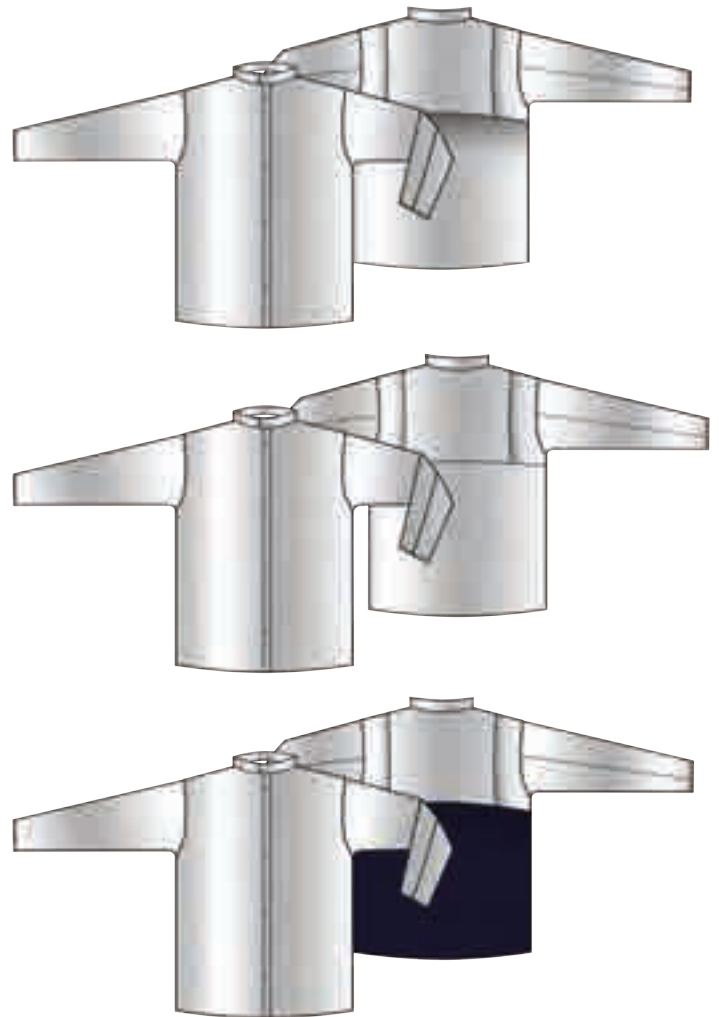
JACKETS - Centre Closure

Centre Closure Jackets have the front opening centred. The closure is a 50mm FR Hook and Loop closure with press studs positioned 100mm apart. The closure is very secure and does not leave any openings when bending down. Design options include:

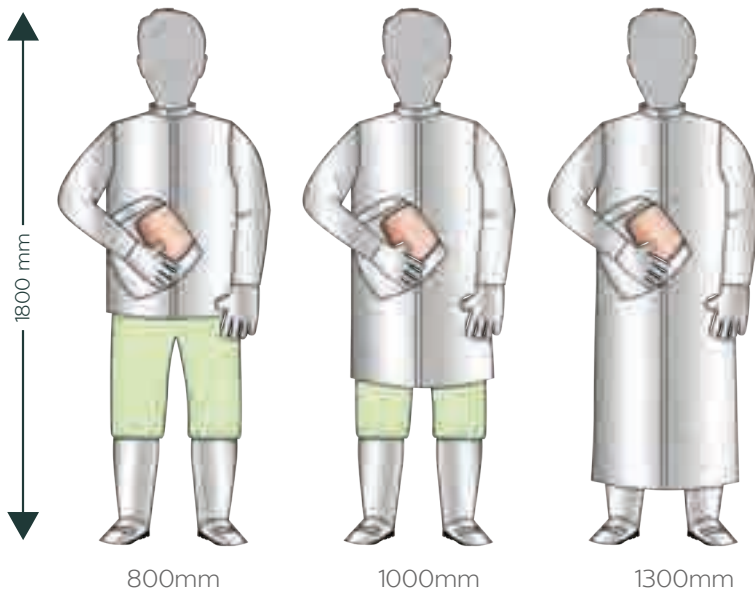
Standard – Fully aluminised (back and front) with an action back for greater movement. This design in a generous fit and provides the wearer with 360 degrees of protection.

Vented – Fully aluminised (back and front) with a horizontal vent across the shoulders for additional ventilation. The overlapping of fabric reduces the chance of sparks or splash entering the vent. The “Vented” option is more suited when the front of the body faces the hazard.

Combo – Aluminised front, sleeves and rear shoulders with a Proban cotton back. The “Combo” design reduces weight and includes a vented back for additional breathability. The “Combo” design is ideal when hazards face the front of the body.



JACKET LENGTHS



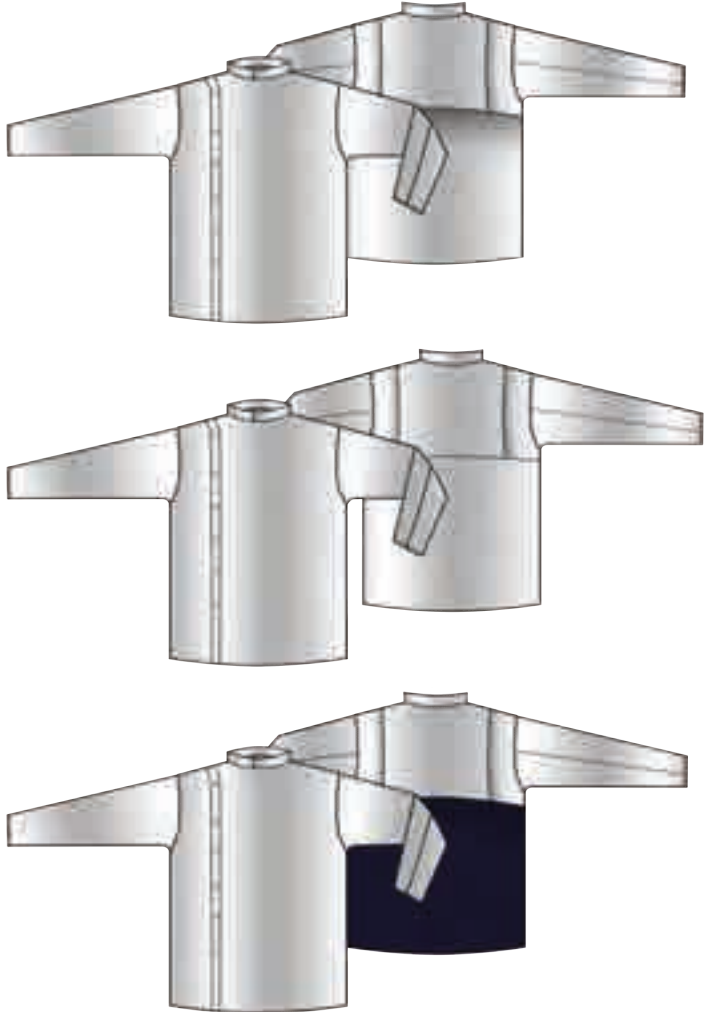
JACKETS - Side Closure

Side Closure Jackets have the opening off centre to the side of the front of the jacket. The side closure has proven to be more durable, as the off centre opening is not exposed to the same levels of a centre closure. The closure is a 50mm FR Hook and Loop closure with press studs positioned 100mm apart. The closure is very secure and does not leave any openings when crouching down. Design options include:

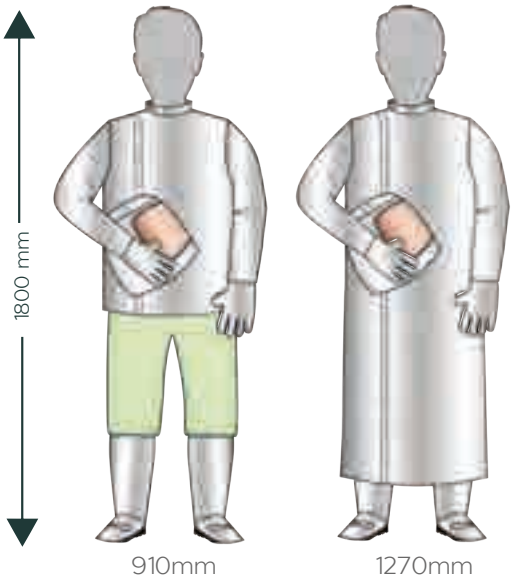
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JACKET LENGTHS



GARMENT DESIGN OPTIONS



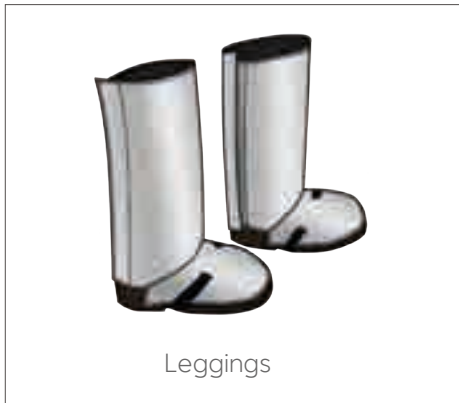
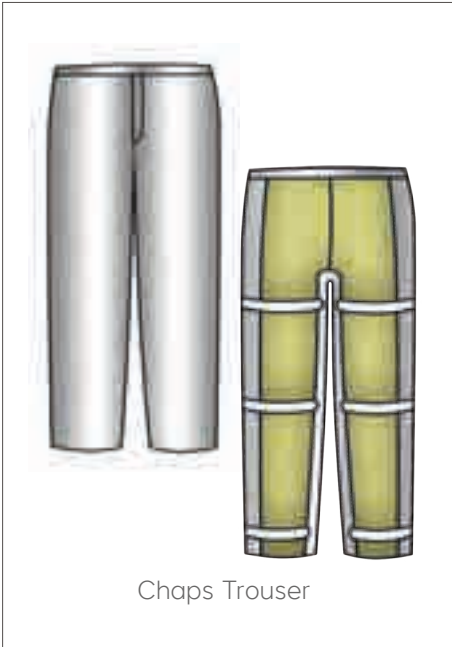
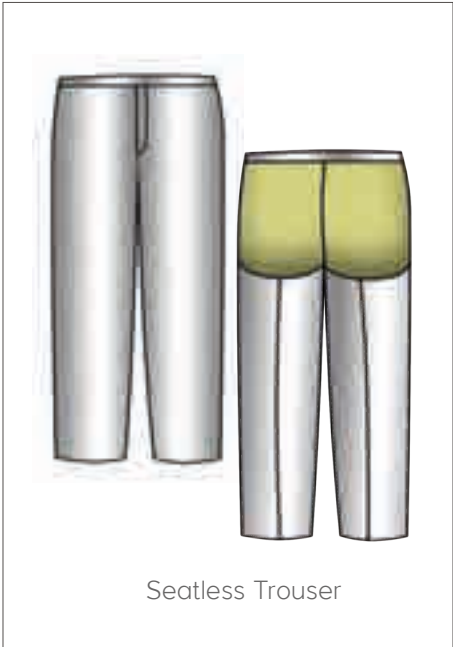
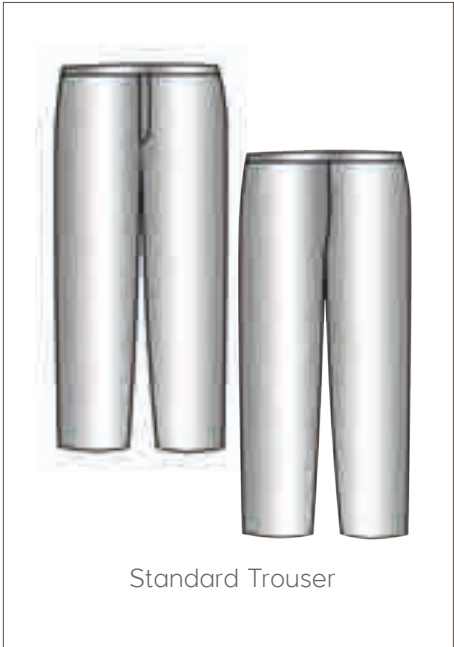
SMOCKS



HEAD AND FACE



LEG PROTECTION



APRON AND SLEEVES



BESPOKE DESIGN AND MANUFACTURE



BESPOKE OR MODIFIED GARMENTS

Customising and modifying garments is a specialty of Elliotts and has been for more than 50 years. We have our own Design and Development Team and our own manufacturing facilities.

In many foundry environments customised or modified garments are a necessity, not a luxury. Our experienced Regional Managers can visit your site and assist in identifying what type of protection is the most suitable for your specific circumstances. We can provide sample materials if required for you to conduct your own tests to ensure the fabric or combination of fabric will perform to your requirements.

Our Design and Development Team can then provide a bespoke or customer designed garment to meet your specific requirements. We will work closely with you to add features to our standard designs or to create a completely new design that meets your specific requirements.



REINFORCING SECTION



SHOULDER REINFORCEMENT



DETACHABLE LINER



ALUMINISED PRIMARY PROTECTIVE CLOTHING



PRIMARY PROTECTIVE CLOTHING



JACKET – CENTRE CLOSURE ACTION BACK

Centre Closure Action Back

- Standard design with action back for extra mobility.
- Centre front closure of 50mm Flame Resistant hook and loop closure with press studs.
- Available in 3 lengths
 - 800mm
 - 1000mm
 - 1300mm
- Available unlined or lined with T-Gard® P190 thermal liner.
- Available in various Aluminised Fabrics.
- Sewn with heat resistant Aramid thread for extra durability.

ISO 11612



* Complies with ISO11612 Requirements
See page 13 for Performance Results



LENGTH 800mm			
UNLINED		LINED	
Fabric Series	Part Number	Fabric Series	Part Number
CX407 *	FCX407JA80		
CA340 *	FCA340JA80	CA340L *	FCA340LJA80
CA515 *	FCA515JA80	CA515L *	FCA515LJA80
PR720 *	FPR720JA80	PR720L *	FPR720LJA80
AR530	FAR530JA80	AR530L *	FAR530LJA80
LENGTH 1000mm			
UNLINED		LINED	
Fabric Series	Part Number	Fabric Series	Part Number
CX407 *	FCX407JA100		
CA340 *	FCA340JA100	CA340L *	FCA340LJA100
CA515 *	FCA515JA100	CA515L *	FCA515LJA100
PR720 *	FPR720JA100	PR720L *	FPR720LJA100
AR530	FAR530JA100	AR530L *	FAR530LJA100
LENGTH 1300mm			
UNLINED		LINED	
Fabric Series	Part Number	Fabric Series	Part Number
CX407 *	FCX407JA130		
CA340 *	FCA340JA130	CA340L *	FCA515LJA130
CA515 *	FCA515JA130	CA515L *	FCA515LJA130
PR720 *	FPR720JA130	PR720L *	FCA515LJA130
AR530	FAR530JA130	AR530L *	FCA515LJA130

SIZES: SML, MED, LRG, XLG, 2XL, 3XL, 4XL

JACKET – SIDE CLOSURE ACTION BACK

Side Closure Action Back

- Standard design with action back for extra mobility.
- Side front closure of 50mm Flame Resistant hook and loop.
- Available in 2 lengths
 - 910mm
 - 1270mm
- Available unlined or lined with T-Gard® P190 thermal liner.
- Available in various Aluminised Fabrics.
- Sewn with heat resistant Aramid thread

ISO 11612



* Complies with ISO11612 Requirements
See page 13 for Performance Results



LENGTH 910mm			
UNLINED		LINED	
Fabric Series	Part Number	Fabric Series	Part Number
CX407 *	FCX407JA91		
CA340 *	FCA340JA91	CA340L *	FCA340LJA91
CA515 *	FCA515JA91	CA515L *	FCA515LJA91
PR720 *	FPR720JA91	PR720L *	FPR720LJA91
AR530	FAR530JA91	AR530L *	FAR530LJA91
LENGTH 1270mm			
UNLINED		LINED	
Fabric Series	Part Number	Fabric Series	Part Number
CX407 *	FCX407JA127		
CA340 *	FCA340JA127	CA340L *	FCA340LJA127
CA515 *	FCA515JA127	CA515L *	FCA515LJA127
PR720 *	FPR720JA127	PR720L *	FPR720LJA127
AR530	FAR530JA127	AR530L *	FAR530LJA127

SIZES: SML, MED, LRG, XLG, 2XL, 3XL, 4XL

PRIMARY PROTECTIVE CLOTHING



JACKET – CENTRE CLOSURE VENTED ACTION BACK

Centre Closure Vented Action Back

- Standard design with action back for extra mobility.
- Vented back section for extra air circulation and comfort.
- Centre front closure of 50mm Flame Resistant hook and Loop closure with press studs.
- Available in 3 lengths
 - 800mm
 - 1000mm
 - 1300mm
- Available unlined or lined with T-Gard® P190 thermal liner.
- Available in various Aluminised Fabrics.
- Sewn with heat resistant Aramid thread for extra durability.

ISO 11612



* Complies with ISO11612 Requirements
See page 13 for Performance Results



LENGTH 800mm			
UNLINED		LINED	
Fabric Series	Part Number	Fabric Series	Part Number
CX407 *	FCX407JV80		
CA340 *	FCA340JV80	CA340L *	FCA340LJV80
CA515 *	FCA515JV80	CA515L *	FCA515LJV80
PR720 *	FPR720JV80	PR720L *	FPR720LJV80
AR530	FAR530JV80	AR530L *	FAR530LJV80
LENGTH 1000mm			
UNLINED		LINED	
Fabric Series	Part Number	Fabric Series	Part Number
CX407 *	FCX407JV100		
CA340 *	FCA340JV100	CA340L *	FCA340LJV100
CA515 *	FCA515JV100	CA515L *	FCA515LJV100
PR720 *	FPR720JV100	PR720L *	FPR720LJV100
AR530	FAR530JV100	AR530L *	FAR530LJV100
LENGTH 1300mm			
UNLINED		LINED	
Fabric Series	Part Number	Fabric Series	Part Number
CX407 *	FCX407JV130		
CA340 *	FCA340JV130	CA340L *	FCA340LJV130
CA515 *	FCA515JV130	CA515L *	FCA515LJV130
PR720 *	FPR720JV130	PR720L *	FPR720LJV130
AR530	FAR530JV130	AR530L *	FAR530LJV130

SIZES: SML, MED, LRG, XLG, 2XL, 3XL, 4XL



JACKET – SIDE CLOSURE VENTED ACTION BACK

Side Closure Vented Action Back

- Standard Design with action back for extra mobility.
- Vented back section for extra air circulation and comfort.
- Side front closure of 50mm Flame Resistant hook and Loop.
- Available in 2 lengths
 - 910mm
 - 1270mm
- Available unlined or lined with T-Gard® P190 thermal liner.
- Available in various Aluminised Fabrics.
- Sewn with heat resistant Aramid thread for extra durability.

ISO 11612



* Complies with ISO11612 Requirements
See page 13 for Performance Results



LENGTH 910mm			
UNLINED		LINED	
Fabric Series	Part Number	Fabric Series	Part Number
CX407 *	FCX407JV91		
CA340 *	FCA340JV91	CA340L *	FCA340LJV91
CA515 *	FCA515JV91	CA515L *	FCA515LJV91
PR720 *	FPR720JV91	PR720L *	FPR720LJV91
AR530	FAR530JV91	AR530L *	FAR530LJV91
LENGTH 1270mm			
UNLINED		LINED	
Fabric Series	Part Number	Fabric Series	Part Number
CX407 *	FCX407JV127		
CA340 *	FCA340JV127	CA340L *	FCA340LJV127
CA515 *	FCA515JV127	CA515L *	FCA515LJV127
PR720 *	FPR720JV127	PR720L *	FPR720LJV127
AR530	FAR530JV127	AR530L *	FAR530LJV127

SIZES: SML, MED, LRG, XLG, 2XL, 3XL, 4XL

PRIMARY PROTECTIVE CLOTHING



JACKET – CENTRE CLOSURE COMBO ACTION BACK

Centre Closure Combo Action Back

- Standard Design with action back for extra mobility.
- Vented back section for extra air circulation and comfort.
- Combination Back – Aluminised upper and Proban lower sections.
- Centre front closure of 50mm Flame Resistant hook and Loop closure with press studs.
- Available in 3 lengths
 - 800mm
 - 1000mm
 - 1300mm
- Available unlined or lined with T-Gard® P190 thermal liner.
- Available in various Aluminised Fabrics.
- Sewn with heat resistant Aramid thread for extra durability.

ISO 11612



* Complies with ISO11612 Requirements
See page 13 for Performance Results



LENGTH 800mm			
UNLINED		LINED	
Fabric Series	Part Number	Fabric Series	Part Number
CX407 *	FCX407JC80		
CA340 *	FCA340JC80	CA340L *	FCA340LJC80
CA515 *	FCA515JC80	CA515L *	FCA515LJC80
PR720 *	FPR720JC80	PR720L *	FPR720LJC80
AR530	FAR530JC80	AR530L *	FAR530LJC80
LENGTH 1000mm			
UNLINED		LINED	
Fabric Series	Part Number	Fabric Series	Part Number
CX407 *	FCX407JC100		
CA340 *	FCA340JC100	CA340L *	FCA340LJC100
CA515 *	FCA515JC100	CA515L *	FCA515LJC100
PR720 *	FPR720JC100	PR720L *	FPR720LJC100
AR530	FAR530JC100	AR530L *	FAR530LJC100
LENGTH 1300mm			
UNLINED		LINED	
Fabric Series	Part Number	Fabric Series	Part Number
CX407 *	FCX407JC130		
CA340 *	FCA340JC130	CA340L *	FCA340LJC130
CA515 *	FCA515JC130	CA515L *	FCA515LJC130
PR720 *	FPR720JC130	PR720L *	FPR720LJC130
AR530	FAR530JC130	AR530L *	FAR530LJC130

SIZES: SML, MED, LRG, XLG, 2XL, 3XL, 4XL



JACKET – SIDE CLOSURE COMBO ACTION BACK

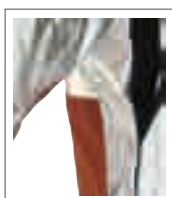
Standard Vented

- Standard Design with action back for extra mobility
- Vented back section for extra air circulation and comfort.
- Combination Back – Aluminised upper and Proban lower sections
- Side front closure of 50mm Flame Resistant hook and Loop
- Available in 2 lengths
 - 910mm
 - 1270mm
- Available unlined or lined with T-Gard® P190 thermal liner.
- Available in various Aluminised Fabrics
- Sewn with heat resistant Aramid thread for extra durability

ISO 11612



* Complies with ISO11612 Requirements
See page 13 for Performance Results



LENGTH 910mm			
UNLINED		LINED	
Fabric Series	Part Number	Fabric Series	Part Number
CX407 *	FCX407JC91		
CA340 *	FCA340JC91	CA340L *	FCA340LJC91
CA515 *	FCA515JC91	CA515L *	FCA515LJC91
PR720 *	FPR720JC91	PR720L *	FPR720LJC91
AR530	FAR530JC91	AR530L *	FAR530LJC91
LENGTH 1270mm			
UNLINED		LINED	
Fabric Series	Part Number	Fabric Series	Part Number
CX407 *	FCX407JC127		
CA340 *	FCA340JC127	CA340L *	FCA340LJC127
CA515 *	FCA515JC127	CA515L *	FCA515LJC127
PR720 *	FPR720JC127	PR720L *	FPR720LJC127
AR530	FAR530JC127	AR530L *	FAR530LJC127

SIZES: SML, MED, LRG, XLG, 2XL, 3XL, 4XL

PRIMARY PROTECTIVE CLOTHING



LEG PROTECTION

Trousers

- Full fitting trousers.
- Designed to be worn over work trousers (secondary protective clothing).
- 50mm adjustable braces.
- Side adjusters for a firmer fit.
- Available unlined or lined with T-Gard® P190 thermal liner.
- Available in various Aluminised Fabrics.
- Sewn with heat resistant Aramid thread for extra durability.



TROUSERS



SEATLESS TROUSERS



CHAPS

Seatless Trousers

- Seatless design for added ventilation.
- Designed to be worn over work trousers (secondary protective clothing).
- 50mm adjustable belt .
- Side adjusters for a firmer fit.
- Available unlined or lined with T-Gard® P190 thermal liner.
- Available in various Aluminised Fabrics.
- Sewn with heat resistant Aramid thread for extra durability.

Chaps

- Full front protection.
- Rear opening with strap and buckle closure for added ventilation.
- Designed to be worn over work trousers (secondary protective clothing).
- 50mm adjustable belt .
- Available unlined or lined with T-Gard® P190 thermal liner.
- Available in various Aluminised Fabrics.
- Sewn with heat resistant Aramid thread for extra durability.

ISO 11612



*Complies with ISO11612 Requirements
Fabrics comply to ISO 11612 Requirements
See page 13 for Performance Results

TROUSERS			
UNLINED		LINED	
Fabric Series	Part Number	Fabric Series	Part Number
CX407 *	FCX407TRS		
CA340 *	FCA340TRS	CA340L *	FCA340LTRS
CA515 *	FCA515TRS	CA515L *	FCA515LTRS
PR720 *	FPR720TRS	PR720L *	FPR720LTRS
AR530	FAR530TRS	AR530L *	FAR530LTRS
SEATLESS TROUSERS			
UNLINED		LINED	
Fabric Series	Part Number	Fabric Series	Part Number
CX407 #	FCX407TSL		
CA340 #	FCA340TSL	CA340L #	FCA340LTSL
CA515 #	FCA515TSL	CA515L #	FCA515LTSL
PR720 #	FPR720TSL	PR720L #	FPR720LTSL
AR530	FAR530TSL	AR530L #	FAR530LTSL
CHAPS			
UNLINED		LINED	
Fabric Series	Part Number	Fabric Series	Part Number
CX407 #	FCX407CHP		
CA340 #	FCA340CHP	CA340L #	FCA340LCHP
CA515 #	FCA515CHP	CA515L #	FCA515LCHP
PR720 #	FPR720CHP	PR720L #	FPR720LCHP
AR530	FAR530CHP	AR530L #	FAR530LCHP

SIZES: SML, MED, LRG, XLG, 2XL, 3XL, 4XL



SMOCKS

Quarterback

- Full aluminised front and sleeves
- Quarter back with neck press stud closure
- Open back for maximum ventilation
- Leather waist belt
- Available unlined or lined with T-Gard® P190 thermal liner
- Available in various Aluminised Fabrics
- Sewn with heat resistant Aramid thread for extra durability

QUARTERBACK			
UNLINED		LINED	
Fabric Series	Part Number	Fabric Series	Part Number
CX407 #	FCX407SQ127LRG		
CA340 #	FCA340SQ127LRG	CA340L #	FCA340LSQ127LRG
CA515 #	FCA515SQ127LRG	CA515L #	FCA515LSQ127LRG
PR720 #	FPR720SQ127LRG	PR720L #	FPR720LSQ127LRG
AR530	FAR530SQ127LRG	AR530L #	FAR530LSQ127LRG



Smock – Opened Back

- Full aluminised front and sleeves
- Rear opening
- Extended side sections wrap around the side of the body
- Open back for maximum ventilation
- Aluminised waist belt
- Available unlined or lined with T-Gard® P190 thermal liner
- Available in various Aluminised Fabrics
- Sewn with heat resistant Aramid thread for extra durability

SMOCK OPEN BACK			
UNLINED		LINED	
Fabric Series	Part Number	Fabric Series	Part Number
CX407 #	FCX407SS130LRG		
CA340 #	FCA340SS130LRG	CA340L #	FCA340LSS130LRG
CA515 #	FCA515SS130LRG	CA515L #	FCA515LSS130LRG
PR720 #	FPR720SS130LRG	PR720L #	FPR720LSS130LRG
AR530	FAR530SS130LRG	AR530L #	FAR530LSS130LRG



ISO 11612



Fabrics comply to ISO 11612 Requirements
See page 13 for Performance Results



HEAD AND FACE

Hood

Aluminised Furnace Hood

Designed to protect the head and upper body in heavy duty furnace environments where protection from high radiant heat, sparks and slag is required.

- Full head, neck, shoulder and chest protection.
- Integrated hard hat, aluminium frame with gold heat reflective visor.
- Replaceable Integrated Visor 310mm wide x 165mm high viewing area.
- Underarm straps to ensure hood stays in place when bending over.



Aluminised Helmet Cover

Light weight hood alternative designed to protect the head, neck and face in light to medium furnace environments where protection from radiant heat, sparks and slag is required.

- Aluminised cover designed to fit securely over a hard hat.
- Neck flap wraps around the side of the head and face to provide good side heat protection.
- Includes helmet cover, hard hat, visor frame and gold plated visor.
- Universal size.



ISO 11612



* Complies with ISO11612 Requirements
See page 13 for Performance Results

ITEM TYPE	FABRIC SYSTEM	FABRIC / DESCRIPTION	PART #
Hood	CX407 *	CarbonX 407gm2	FCX407HD1GV
	CA340L *	Aluminised Carbon/ Aramid 340gsm / T-Gard® P190	FCA340LHD1GV
	CA515L *	Aluminised Carbon/ Aramid 515gsm / T-Gard® P190	FCA515LHD1GV
	PR720L *	Aluminised Preox 720gsm/ T-Gard® P190	FPR720LHD1GV
Helmet Cover	CX407 *	CarbonX 407gm2	FCX407HCGV
	CA340 *	Aluminised Carbon/ Aramid 340gsm	FCA340HCGV



Balaclava

The CarbonX balaclava is a flame resistant double ply knit offering supreme protection for the face and neck area. Not only is this balaclava soft and comfortable, it has an arc rating of 23.3 cal/cm and an PPE 2 level. The balaclava is shrink and fade resistant, and guaranteed to hold its shape. With odor absorbing fabric this double-ply hood is an excellent choice for your arc flash protection needs. The CarbonX Balaclava features:

- Arc Rating: 23.3 cal/cm
- PPE Level 2 (HRC2)
- NFPA 70E compliant
- 1/2" wide elasticized face opening
- Shrink and fade resistant
- Provides arc protection to the neck, upper chest, and top of shoulder blade
- Flat-stitched seams
- Cover-stitched bound drape
- Contoured shoulders to reduce bunching of the bib



Gold Visor

The Ellgard Gold Visor is a gold plated 1mm polycarbonate clear visor tinted to shade 2, is optically polished and treated. The gold plated chinguard visor is designed for use in high or very high temperature work applications where a prolonged period of heat to the visor may occur. The front of the visor is coated with a thin film of 24ct gold. This layer of gold is very effective at reflecting and blocking heat, however, it is very soft and could become scratched and damaged. Ideal for protection against splashing from hot or molten metals, harmful liquids and radiant heat.

The gold polycarbonate visors have a safe operating temperature of 125°C (material will start to distort and warp when it reaches its maximum temp).



Gold Visor Frame and Hard Hat

The Gold Visor Kit includes the Ellgard Gold Visor, visor holder and hard hat.

Neck Flap

The Aluminised Neck Flaps are made from either CX407 or CA340 which are softer more flexible materials which are more comfortable to wear and helps with movement. Fitted with hook and loop tape for attachment to safety helmets.

ITEM TYPE	FABRIC SYSTEM	FABRIC / DESCRIPTION	PART #
Neck Flap	CX407	CarbonX 407gm2	FCX407NF
	CA340	Aluminised Carbon/ Aramid 340gsm	FCA340NF
Faceshield	NA	Gold plated face shield	ELLGARD50
Faceshield / Visor holder / Hard hat	NA	Gold plated face shield / Visor holder / Hard hat	ELLGARD45H

ISO 11612



Complies with ISO11612 Requirements



OVERBOOTS AND LEGGINGS

Aluminised Furnace Boots

Designed to be worn over safety boots and to protect the feet and ankles from high radiant heat, sparks and slag.

- Utilising heavy duty Aluminised Preox PR720 and fully lined with T-Gard® P190.
- Heat resistant rubber soles with insulating sole inserts for additional heat protection.
- Hook and Loop adjustable closure strap.



Aluminised Furnace Leggings

Designed to protect the lower leg and foot from high radiant heat, sparks and slag.

- Utilising heavy duty Aluminised Preox PR720.
- Available unlined or fully lined with T-Gard® P190.
- 400mm long
- Leather under boot straps
- FR Hook and Loop rear closure



ISO 11612



* Complies with ISO11612 Requirements
See page 13 for Performance Results

ITEM TYPE	FABRIC SYSTEM	FABRIC / DESCRIPTION	PART #
Over Boot	PR720L *	Aluminised Preox PR720/ T-Gard® P190	FPR720LOBS
Over Boot Reinforced	PR720L *	Aluminised Preox PR720/ T-Gard® P190	FPR720LOBR
Legging	PR720 *	Aluminised Preox PR720	FPR720LG400
	PR720L *	Aluminised Preox PR720/ T-Gard® P190	FPR720LLG400



APRONS AND SLEEVES

Aluminised Furnace Apron

- Available in lined and unlined fabric systems.
- Fitted with adjustable leather strap and buckle straps.
- Available in 2 sizes:
 - 1070mm long x 610mm wide
 - 1210mm long x 910mm wide

UNLINED		
Fabric System	Size: 1070mm x 610mm Part Number	Size: 1210mm x 910mm Part Number
CX407	FCX407A106	FCX407A129
CA340	FCA340A106	FCA340A129
CA515	FCA515A106	FCA515A129
PR720	FPR720A106	FPR720A129
AR530	FAR530A106	FAR530A129
LINED		
Fabric System	Size: 1070mm x 610mm Part Number	Size: 1210mm x 910mm Part Number
CA340L	FCA340AL106	FCA340AL129
CA515L	FCA515AL106	FCA515AL129
PR720L	FPR720AL106	FPR720AL129
AR530L	FAR530AL106	FAR530AL129

Aluminised Furnace Sleeves

- Available in lined and unlined fabric systems.
- Fitted with adjustable leather strap and buckle rear closure.
- Designed to integrate with Aluminised Furnace Apron.

UNLINED	
Fabric System	Part Number
CX407	FCX407SLV
CA340	FCA340SLV
CA515	FCA515SLV
PR720	FPR720SLV
AR530	FAR530SLV



PRIMARY PROTECTIVE CLOTHING



WELDWOOL

Jackets/ Coats

- Made from 780gsm WeldWool®
- Available in two lengths 1000mm and 1500mm
- Side closure of 50mm Flame Resistant hook and loop
- Sewn with FR Aramid Thread
- Reinforced inner sleeve section
- Hook and Loop sleeve cuff tabs
- Designed to be worn over Secondary Protective Clothing



Trousers

- Made from 780gsm WeldWool®
- Heavy duty 50mm wide braces
- Sewn with FR Aramid Thread
- Designed to be worn over Secondary Protective Clothing

Hood

- Made from 780gsm WeldWool®
- Drawstring face closure
- Sewn with FR Aramid Thread

Item Type	Part Number - Navy	Part Number - Orange
JACKET (1000MM LONG)	FMC1000	FMC1005
COAT (1500MM LONG)	FMC1500	FMC1505
TROUSER	FMT30NA	FMT30OR
HOOD	FMH16NA	FMH16OR

SIZES: SML, MED, LRG, XLG, 2XL, 3XL, 4XL



TROUSER



HOOD



OASIS | PR97 | REPEL

Jackets/ Coats

- Made from either Oasis, PR97 or Repel
- Available in two lengths 1000mm and 1500mm
- Side closure of 50mm Flame Resistant hook and loop
- Sewn with FR Aramid Thread
- Reinforced inner sleeve section
- Hook and Loop sleeve cuff tabs
- Designed to be worn over Secondary Protective Clothing

Material	Length	Part Number
OASIS	1000MM	FCOA12NA10
OASIS	1500MM	FCOA12NA15
PR97	1000MM	FCPR38OR10
PR97	1500MM	FCPR38OR15
REPEL	1000MM	FCREP10
REPEL	1500MM	FCREP10

SIZES: SML, MED, LRG, XLG, 2XL, 3XL, 4XL



OASIS



PR97



REPEL

SECONDARY PROTECTIVE CLOTHING



SECONDARY PROTECTIVE CLOTHING



Secondary protective clothing is the last line of defence to protect the wearer from foundry hazards which can include molten metal splash, flames, radiant and convective heat as well as electric arc. While the primary protective clothing is designed to protect from radiant heat and molten metal the secondary protective clothing should also offer protection against intermittent exposure to these hazards.

If exposed to flame the clothing must not continue to burn once the ignition source is removed. The clothing should also provide protection from molten metal splash and radiant heat.

Protective fabrics designed to be used for secondary protective clothing for foundry applications are usually worn close to the skin so they should be lightweight and breathable, as well as being able to manage moisture. These qualities all contribute to offering the wearer the highest levels of comfort possible.

Fabrics

Choosing a protective fabric will be determined by the type of metal hazard of the workplace. The fabrics are usually categories depending which kind of molten metal the fabric can shed.

- Ferrous metals only
- Aluminium only
- Ferrous metals and Aluminium

Fabric	Protection against
	Oasis protects against aluminium and cryolite
	PR97 protects against aluminium, cryolite, iron, steel, copper, magnesium and nickel.

Clothing Types

Elliotts Secondary Protective Clothing is available in coveralls or long sleeve shirts and trousers.

Clothing Design

Secondary Protective Clothing for foundry applications must incorporate certain design features including:

- Long sleeve shirts and trousers
- Garment designs should avoid having areas where molten metal can be trapped or rest against the material for example no cuffs or open pockets.



Visit www.elliotts.net for more information on Foundry Secondary Protective Clothing

HEAT RESISTANT GLOVES AND MITTS



HEAT RESISTANT GLOVES AND MITTS



SELECTING YOUR HEAT RESISTANT GLOVE

Specialised Heat Resistant Gloves are essential for workers who are exposed to extreme heat hazards. It is important to understand the types of heat hazards, glove standards and test methods and how to choose the most appropriate glove or mitt to provide the best possible protection for your workplace.

Recognised Heat Resistant Glove Experts

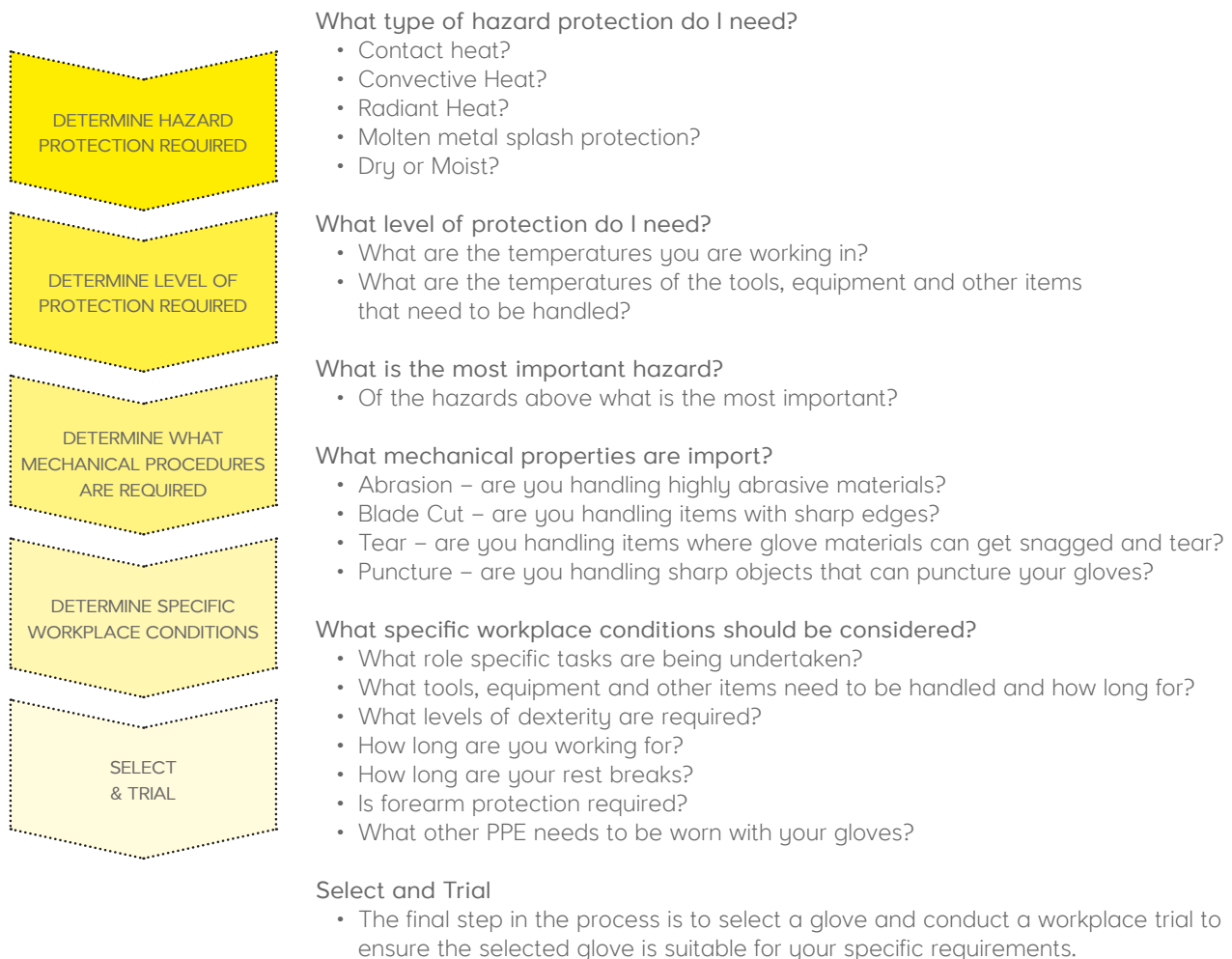
Elliotts have been designing and manufacturing specialised gloves for over 50 years. Our Australian based Design and Development Team are continually searching the world for new technologies and developing our own unique materials.

Testing to International Standards

Elliotts focus heavily on testing and where possible independently certifying our gloves to Australian and International Standards. AS/NZS 2161.4:1999 - Protection against thermal risks (heat and fire) which is based on EN407 is the industry standard. All Elliotts Heat Resistant gloves have been independently tested to AS/NZS 2161.4:1999 and where possible are certified to that standard by SAI Global.

Heat Glove Selection Process

We are always helping our customers select the right hand protection for their workplace. Follow the Heat Glove Selection Process below to help you choose the most appropriate glove or call us and one of our experienced Account Managers. We can help you with this process and have specialised spot thermal (infrared) cameras with IR spot meters for effectively calculating the heat levels at your workplace.

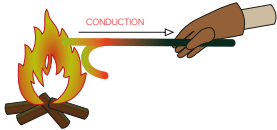

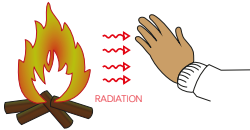



HEAT RESISTANT GLOVES AND MITTS



KNOW YOUR HEAT HAZARDS

Heat transfer is the physical act of thermal energy being exchanged between two systems by dissipating heat. Temperature and the flow of heat are the basic principles of heat transfer. The amount of thermal energy available is determined by the temperature, and the heat flow represents movement of thermal energy. Heat transfer can be grouped into three broad categories: conduction (Contact Heat), convection (Convective Heat), and radiation (Radiant Heat).

<p>Conduction (Contact Heat)</p> <p>Conduction transfers heat via direct molecular collision. An area of greater kinetic energy will transfer thermal energy to an area with lower kinetic energy. Conduction is the most common form of heat transfer and occurs via physical contact. Examples would be to place your hand against a hot object or place metal into an open flame.</p>	
<p>Convection (Convective Heat)</p> <p>When a fluid, such as air or a liquid, is heated and then travels away from the source, it carries the thermal energy along. This type of heat transfer is called convection. The fluid or air above a hot surface expands, becomes less dense, and rises.</p>	
<p>Radiation (Radiant Heat)</p> <p>Thermal radiation generates from the emission of electromagnetic waves. These waves carry the energy away from the emitting object. All materials radiate thermal energy based on their temperature. The hotter an object, the more it will radiate. The sun is a clear example of heat radiation that transfers heat across the solar system. Simply radiant heat is the transfer of heat between hot and cold bodies without contact between them.</p>	
<p>Molten Metal Splashes</p> <p>Molten metal splash hazards exist whenever metal is being melted, poured or molded. The addition of wet materials to the molten bath can cause an explosion. Molten material can also be spilled or splashed when being transferred from one vessel to another.</p>	
<p>Dry or Moist</p> <p>If your thermal hazard is also moist then a neoprene dipped glove should be used. These gloves are designed for handling hot liquids such as water, oils and selected chemicals, handling hot items that are covered in liquids, food handling applications in bakeries and for protection from steam.</p>	



MAGNASHIELD® HEAT RESISTANT GLOVES

The Magnashield® range of Heat Resistant Glove and Mitt covers are manufactured from a variety of the latest materials to provide protection from all heat hazard types.

Aluminised

MagnaShield® Aluminised gloves are designed for applications where protection from high radiant heat is required, the aluminised back of hand reflects the radiant heat and also offers protection from other hazards.

The MagnaShield® Aluminised range is available in 3 palm materials:

- **Woven Aramid:** the high performance glove ideal for applications with high radiant heat where hot items are required to be handled for longer periods.
- **Heat Treated Leather:** ideal for applications where standard leather may be drying out. Heat Treated Leather is designed to handle higher contact heat levels for longer periods.
- **Leather:** entry level glove with good mechanical performance, ideal for handling items and tools with low heat levels.

All gloves are fully lined with a T-GARD® N260, an inherently flame resistant aramid felt offering excellent thermal properties.

Aramid

MagnaShield® Aramid gloves and mitts are designed for applications where contact and convective heat are hazards and are available in 305mm and 457mm lengths. The Aramid range utilises two fabric combinations:

- **Loop Pile:** Loop pile aramid is utilised throughout the whole glove or mitt including palm, back of hand and cuff. This option offers high levels of contact and excellent convective heat protection with added cut and abrasion resistance.
- **Woven:** Woven Aramid is utilised throughout the whole glove including palm, back of hand and cuff. This option offers high levels of contact and convective heat protection with added cut and abrasion resistance. This option offers better durability and slightly better radiant heat protection than the Woven/Felt option.
- **Woven/ Felt:** Woven aramid is utilised on the palm which provides better mechanical performance and Aramid felt it utilised on the back of the hand and cuff which more economical but still offers excellent protection and improved small metal splash protection than the Woven option.

All gloves and mitts are fully lined with a T-GARD® N260, an inherently flame resistant aramid felt offering excellent thermal properties.

E-Glass

- **HeatShield®:** HeatShield® is manufactured from E Glass fibre which is a non-combustible, flexible, inorganic material that has a continuous service temperature of 500°C.
- **T1000®:** T1000® is manufactured from E Glass Fibre which is a non-combustible, flexible, inorganic material that has been treated to withstand higher temperatures than HeatShield. The T1000® fabric has a continuous service temperature of 800°C.

All mitts are fully lined with a T-GARD® N260, an inherently flame resistant aramid felt offering excellent thermal properties.

Neoprene Dipped

MagnaShield® Neoprene dipped gloves are designed to be used in applications where there is moisture or hot liquids. These gloves are designed for handling hot liquids such as water, oils and selected chemicals, handling hot items that are covered in liquids, food handling applications in bakeries and for protection from steam.

- ChemVex NX20 provides protection up to 200 °C
- ChemVex NX50 provides protection up to 400 °C



HEAT RESISTANT GLOVES & MITTS

STANDARDS

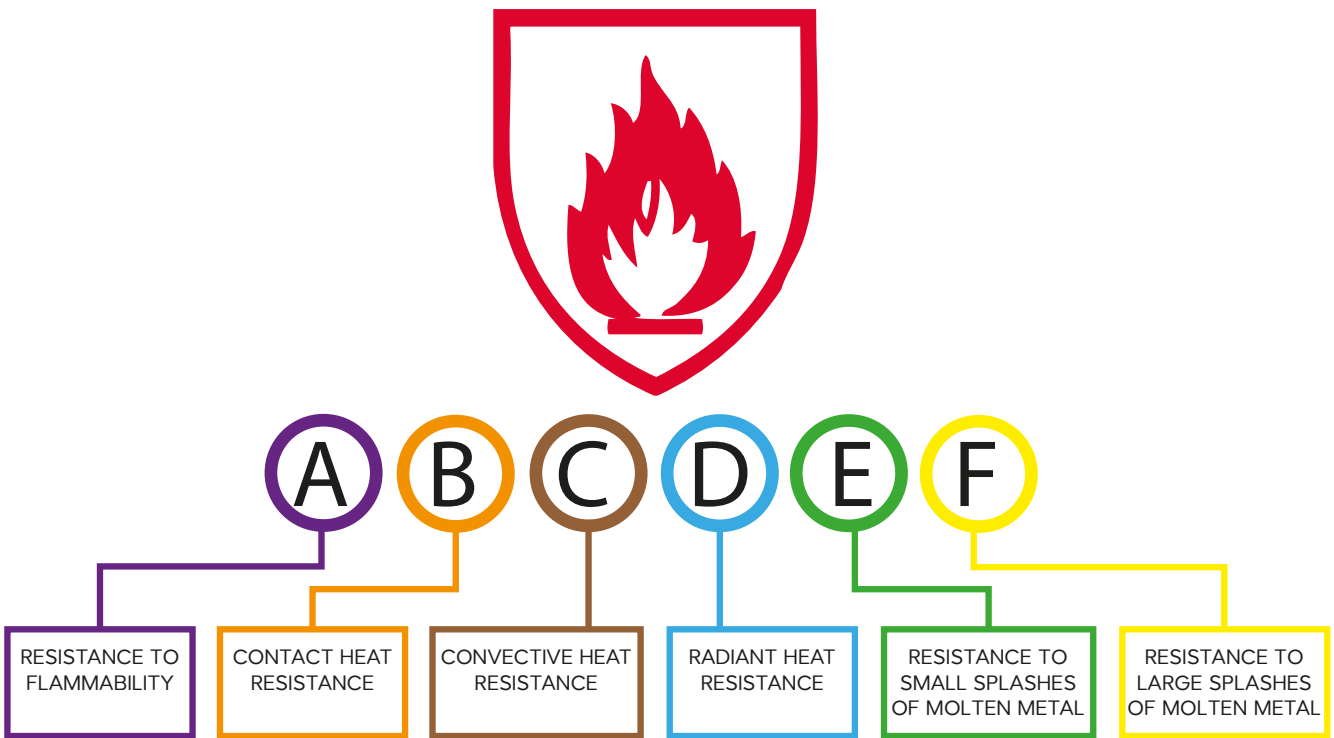
AS/NZS 2161.4:1999 - Protection against thermal risks (heat and fire) EN407

Scope

This standard specifies thermal performance for protective gloves against heat and/or fire. It is expressed by using the heat and flame pictogram.

Definition and Requirements

The nature and degree of protection is shown by a pictogram followed by a series of six performance levels, relating to specific protective qualities. Gloves must also achieve at least Performance level 1 for abrasion and tear.



A - RESISTANCE TO FLAMMABILITY (PERFORMANCE LEVEL 0-4)

Based on the length of time the material continues to burn and glow after the source of ignition is removed. The seams of the glove shall not come apart after an ignition time of 15 seconds.

Burning Behaviour is tested according to EN ISO 6941 with the glove mounted and tested vertically. A flame is placed directly below and in line with the glove at an angle of 30° and a distance of 20mm. The glove is tested for each ignition time i.e. 3 seconds and 15 seconds. The flame time and afterglow time for each performance level are as follows:

Performance Level	After Flame Time (s)	After Glow Time (s)
1	20	No req
2	10	120
3	3	25
4	2	5



B - CONTACT HEAT RESISTANCE (PERFORMANCE LEVEL 0-4)

Based on the temperature range (100-500oC) at which the user will feel no pain for at least 15 seconds. If an EN level 3 or higher is obtained, the product shall record at least EN level 3 in the flammability test. Otherwise, the maximum contact heat level shall be reported as level 2.

Contact Heat is tested according to EN 702. Samples are taken from the palm area and placed in contact with a cylinder of the appropriate temperature. To gain the relevant performance level, the temperature of the inside of the glove cannot rise by more than 10°C within the threshold time.

Performance Level	Contact Temp °C	Threshold Time
1	100	15
2	250	15
3	350	15
4	500	15

C - CONVECTIVE HEAT RESISTANCE (PERFORMANCE LEVEL 0-4)

Based on the length of time the glove is able to delay the transfer of heat from a flame. A performance level shall only be mentioned if a performance level of 3 or 4 is obtained in the flammability test.

Convective Heat is tested according to EN 367 : 1992. Samples are subjected to the incidental heat from a flame, and the heat passing through to the inside of the glove is measured. The time to record a temperature rise of 24°C is the Heat Transfer Index (HTI).

Performance Level	Heat Transfer Index HTI (s)
1	4
2	7
3	10
4	18

D - RADIANT HEAT RESISTANCE (PERFORMANCE LEVEL 0-4)

Based on the length of time the glove is able to delay the transfer of heat when exposed to a radiant heat source. A performance level shall only be mentioned if a performance level 3 or 4 is obtained in the flammability test.

Radiant Heat is tested according to EN ISO 6942 : 2002. The back of the sample is exposed to radiant heat density of 20kW/m2 and the time taken for the temperature on the inside of the glove to rise 24°C gives the performance level.

Performance Level	Heat Transfer Index HTI (s)
1	7
2	20
3	50
4	95

E - RESISTANCE TO SMALL SPLASHES OF MOLTEN METAL (PERFORMANCE LEVEL 0-4)

The number of molten metal drops required to heat the glove sample to a given level. A performance level shall only be mentioned if a performance level 3 or 4 is obtained in the flammability test.

Resistance to small splashes of molten metal is tested according to EN 348 : 1992. Molten drops from a metal rod melted by exposing the rod to a flame are allowed to fall on the sample. The number of drops required to the raise the temperature on the inside of the glove by 40°C gives the performance level.

Performance Level	Heat Transfer Index HTI (s)
1	10
2	15
3	25
4	35

F - RESISTANCE TO LARGE SPLASHES OF MOLTEN METAL (PERFORMANCE LEVEL 0-4)

The weight of molten metal required to cause smoothing or pin-holing across a simulated skin placed directly behind the glove sample. The test is failed if metal droplets remain stuck to the glove material or if the specimen ignites.

Resistance to large splashes of molten metal is tested according to EN 373 : 1993. A quantity of molten iron is poured onto the sample, which has a PVC film mounted behind the sample. This film must not show any changes to the surface (such as discrete spots or damage) when the sample is exposed to the quantity of molten iron as shown in the following table:

Performance Level	Heat Transfer Index HTI (s)
1	30
2	60
3	120
4	200



MAGNA SHIELD®

HEAT RESISTANT GLOVES & MITTS

PERFORMANCE DATA

	Abrasion	Blade Cut	Tear	Puncture	BURNING (WHOLE GLOVE)	CONTACT HEAT (PALM)	CONTACT HEAT	RADIANT HEAT	SMALL	LARGE
					Seconds	Seconds	Seconds	Seconds	Drops	Drops
ARAMID (woven)										
KGLFW12FK	3	5	4	3	4	3	4	3	3	N/A
					After Flame: 0 After Glow: 0 No damage	100°C: 114 250°C: 25 350 °C: 18 500°C: 13	Back: 30 Palm: 30	72	Palm: 30 (Level 3) Back: 30 (Level 3)	
KGL12FK	3	5	4	4	4	3	4	3	3	N/A
					After Flame: 0 After Glow: 0 No damage	100°C: 107 250°C: 27 350 °C: 18 500°C: 13	Back: 30 Palm: 28	61	Palm: 25 (Level 3) Back: 41 (Level 4)	
KGLP12	3	5	4	4	4	3	4	3	4	
					After Flame: 0 After Glow: 0 No damage	100°C: 94 250°C: 25 350 °C: 19 500°C: 12	Back: 42 Palm: 42	62	Palm: >45 (Level 4) Back: >45 (Level 4)	
ARAMID (knitted)										
ELG8000	3	3	4	x	x	4	4	3	x	x
					x	350 °C: 30 500°C: 21	Back: 37 Palm: 37	56	x	x
ELG8010	4	3	4	2	x	2	2	x	x	x
					x	350 °C: 30 500°C: 21	Back: 37 Palm: 37	x	x	x
ALUMINISED										
APG16WS	3	2	4	4	4	1	3	4	4	NA
					After Flame: 0 After Glow: 0 No damage	100°C: 46 250°C: 11	Back: 11s Palm: 15s	251	Palm: 45 (Level 4) Back: >45 (Level 4)	N/A
APG16WSP	3	2	4	4	4	1	3	4	4	x
					After Flame: 0 After Glow: 0 No damage	100°C: 50 250°C: 11	Back: 11 Palm: 17	278	Palm: 45 (Level 4) Back: >45 (Level 4)	x
APG16WSK	3	5	4	3	4	3	3	4	3	x
					After Flame: 0 After Glow: 0 No damage	100°C: 109 250°C: 27 350 °C: 20 500°C: 13	Back: 12 Palm: 24	279	Palm: 32 (Level 3) Back: >45 (Level 4)	x
E-GLASS										
HSM16WL	2	5	4	2	4	4	4	3	0	x
					After Flame: 0 After Glow: 0 No damage	100°C: 132 250°C: 36 350 °C: 28 500°C: 18	Back: 29 Palm: 29	83	Palm: 8 (Level 0)	
TM16WL	2	4	4	2	4	4	4	3	0	x
					After Flame: 0 After Glow: 0 No damage	100°C: 168 250°C: 34 350 °C: 24 500°C: 16	Back: 30 Palm: 30	69	Palm: 8 (Level 0)	
NEOPRENE DIPPED										
ELG7520	2	2	2	2	3	2	x	x	4	x
					???	???	x	x	???	x
ELG7550	1	2	2	2	4	3	x	x	4	x
					After Flame time: 0 After Glow time: 0 No damage	350 °C: 19 500°C: 13	x	x	Palm: > 35 (Level 4) Back: > 35 (Level 4)	





SPECIALISED HEAT RESISTANT GLOVES



ChemVex NX20



ChemVex NX20 is a heat and oil resistant neoprene dipped glove with a double layer jersey liner. Crinkled finish offering excellent grip in both dry and wet working conditions, provides protection from -20 up to 200 °C.

- Neoprene coating providing excellent heat resistance up to 200 °C
- Excellent resistance to oils, chemicals and greases
- Crinkled finish offering excellent grip in both dry and wet working conditions
- Double lined jersey contributing great warmth working under -20 °C
- Unique coating formulation contributing extra flexibility and reducing hand fatigue

Part Number	Size	Length
ELG752010	10	45 cm

EN388



2222

EN407



32xx4x

ChemVex NX50

ChemVex NX50 is a heavy duty heat and oil resistant neoprene dipped glove with a double layer jersey liner. Crinkled finish offering excellent grip in both dry and wet working conditions, provides protection from -50 up to 400 °C

- Neoprene coating providing excellent heat resistance up to 400 °C
- Excellent resistance to oils, chemicals and greases
- Crinkled finish offering excellent grip in both dry and wet working conditions
- Double lined jersey contributing great warmth working under -50 °C
- Extra removable liner allowing to wash and dry easily

Part Number	Size	Length
ELG755008	8	45 cm
ELG755010	10	45 cm

EN388



2222

EN407



43xx4x



MagnaShield® DLK35



MagnaShield® DLK35 is a heavy duty double layer knitted heat resistant glove. Knitted Aramid/ Cotton blend providing flexible and comfortable high heat protection with specialised silicon strip coating providing excellent grip.

- Contact temperature level 4 (500 degrees C) requires 15 seconds while Fortes HC35 achieved 21 seconds; Convective heat level 4 requires 18 seconds while HC35 achieved 37 seconds
- Exclusive technology of double layer liner offering best protection against high temperature
- The MOST flexible & comfortable heat resistant glove in the market, well up to 500 °C
- Both sides silicon coated providing excellent grip, extra heat resistance and durability
- 360° breathability to keep your hands cool while wearing
- Multiple launderings while both heat and cut resistant level remain the same

Part Number	Size	Length
ELG800009	9	35 cm
ELG800010	10	35 cm

EN388



334x

EN407



x443xx

G-Flex® TempX Heat Resistant Glove

G-Flex® TempX Heat Resistant Glove is ideal for handling hot parts, welded steel, ceramic moulds and other hot objects where high levels of dexterity is required.

- Contact heat resistance Level 2 - 250°C for 15 seconds.
- Knitted aramid liner provides Cut 3 protection and heat resistance.
- Special nitrile coating with raised dots for extra grip and heat protection.
- Ideal for precision work handling hot oily parts.
- Excellent abrasion resistance.
- Comfortable terry cloth lining.
- Available in size 9 and 11.

Part Number	Size	Cuff Colour
ELG801009	9	White
ELG801011	11	Brown

EN388



4342

EN407



X22XX



MAGNA SHIELD® ALUMINISED GLOVES



The MagnaShield® Aluminised Heat Resistant Glove Series is designed to be worn in environments where there are large amounts of radiant heat. The back of the glove is made from PR720 Aluminised Preox which is tough yet flexible and offers excellent resistance to radiant heat as well as molten metal splash. Each style is lined with T-Gard N260 aramid felt and is available in 3 palm materials.



Leather Palm



**Heat Resistant
Leather Palm**



Woven Aramid Palm

MagnaShield® Chrome Leather

The Magnashield® Leather aluminised backed glove is designed to be worn in environments where there are large amounts of radiant heat. The chrome leather palm is designed to for primary abrasion protection and not contact heat. Leather palm gloves provide good abrasion resistance and improved dexterity when compared to the woven aramid version.

- PR720 Aluminised Preox back for radiant heat and molten metal splash protection.
- Chrome Leather palm for good abrasion protection and dexterity.
- T-Gard® N260 aramid felt lining for additional thermal protection.
- Wear seams are welded for additional protection and all seams are sewn with heat resistant Kevlar® thread for extra durability
- Length 406mm.

Part Number	Size	Aluminised Material
APG16WS	LRG	PR720 Aluminised Preox

EN388



3244

EN407



41344x





MagnaShield® Aramid

The Magnashield® Aramid aluminised backed glove is designed to be worn in environments where there are large amounts of radiant heat and contact heat. The woven aramid palm provides the highest contact heat performance of this style of glove and the highest cut resistance Level 5.

- PR720 Aluminised Preox back for radiant heat and molten metal splash protection.
- Woven Aramid palm for best contact heat and cut resistance protection.
- T-Gard® N260 aramid felt lining for additional thermal protection.
- Wear seams are welted for additional protection and all seams are sewn with heat resistant Kevlar® thread for extra durability.
- Length 406mm.

Part Number	Size	Aluminised Material
APG16WSK	LRG	PR720 Aluminised Preox



MagnaShield® Pyrocore Leather

The Magnashield® Pyrocore Leather aluminised backed glove is designed to be worn in environments where there are large amounts of radiant heat. The heat resistant Pyrocore Leather is designed to handle higher temperatures than standard leather. Leather palm gloves provide good abrasion resistance and improved dexterity when compared to the woven aramid version.

- PR720 Aluminised Preox back for radiant heat and molten metal splash protection.
- Pyrocore Heat Resistant Leather palm for good abrasion protection and dexterity.
- T-Gard® N260 aramid felt lining for additional thermal protection.
- Wear seams are welted for additional protection and all seams are sewn with heat resistant Kevlar® thread for extra durability
- Length 406mm.

Part Number	Size	Aluminised Material
APG16WSP	LRG	PR720 Aluminised Preox





MAGNASHIELD® ALUMINISED GLOVES



Woven Aramid Gloves and Mitts

Magnashield® Woven Aramid Gloves and Mitts are made of heat resistant Para-Aramid outer shell materials and Meta-Aramid thermal liners. These highly technical materials provide high levels of contact, convective and radiant heat protection as well as protection from small drops of molten metal. In addition to heat resistant properties the gloves and mitts offer Cut Level 5 protection as well as high levels of abrasion, tear and puncture resistance.

- Woven Para-Aramid palm
- Choice of Woven Para-Aramid or Para-Aramid Felt back and cuff
- Lined with T-Gard® N260 Meta-Aramid thermal liner
- Gloves available in 3 lengths
- Mitts available in 2 lengths
- Sewn with heat resistant Aramid threads
- Mitt wear seams welted for extra durability

Fully Woven Aramid			
		EN388	EN407
			
		3543	43433X
Item	Part Number	Length	Size
Glove	KGLFW12FK	305mm	Large (Universal)
Glove	KGLFW16FK	406mm	Large (Universal)
Glove	KGLFW18FK	457mm	Large (Universal)
Mitt	KMLFW12FK	305mm	Large (Universal)
Mitt	KMLFW18FK	457mm	Large (Universal)

Woven Para - Aramid Palm			
		EN388	EN407
			
		3544	43433X
Item	Part#	Length	Size
Glove	KGL12FK	305mm	Large (Universal)
Glove	KGL16FK	406mm	Large (Universal)
Glove	KGL18FK	457mm	Large (Universal)
Mitt	KMW12FK	305mm	Large (Universal)
Mitt	KMW18FK	457mm	Large (Universal)





Loop Pile Aramid Gloves and Mitts

Magnashield® Loop Pile Para-Aramid Gloves and Mitts are made of heat resistant Para-Aramid outer shell materials and Meta-Aramid thermal liners. These highly technical materials provide high levels of contact, convective and radiant heat protection as well as protection from small drops of molten metal. In addition to heat resistant properties the gloves and mitts offer Cut Level 5 protection as well as high levels of abrasion, tear and puncture resistance.

- Loop Pile Para-Aramid palm, back and cuff
- Lined with T-Gard® N260 Meta-Aramid thermal liner
- Gloves and Mitts available in 2 lengths
- Sewn with heat resistant Aramid threads
- Mitt wear seams welted for extra durability

Fully Woven Aramid

			
		3544	43434X
Item	Part Number	Length	Size
Glove	KGLP12	305mm	Large (Universal)
Glove	KGLP18	457mm	Large (Universal)
Mitt	KMLP12	305mm	Large (Universal)
Mitt	KMLP18	457mm	Large (Universal)



Cover Mitt and Glove Saver

Glove Saver

- Prolongs the life of your gloves and mitts
- Provides addition heat resistance
- Made from Woven Para-Aramid
- Sewn with heat resistant Aramid threads.
- Ambidextrous
- Unlined
- Part# KGS10



Cover Mitt

- Prolongs the life of your gloves and mitts
- Provides addition heat resistance
- Woven Para-Aramid palm and Para-Aramid Felt back
- Sewn with heat resistant Aramid threads.
- Unlined
- Part# KCM10



HEATSHIELD® / T1000® MITTS



Heatshield® Mitts

Product Code - HSM16WL

HeatShield® mitts are ideal for short duration contact heat protection up to 500°C.

- Made from HeatShield a non-asbestos E-Glass fibre fabric
- Short duration contact heat protection up to 500°C
- Thickness of 2.2mm
- Lined with T-Gard® N260 Meta-Aramid thermal liner
- Sewn with heat resistant Aramid threads.
- Wear seams welted for extra durability.
- One size fits all

Part Number	Length
HSM16WL	406mm

T1000® Mitts

Product Code - TCM10

T1000® mitts are ideal for short duration contact heat protection up to 800°C.

- Made from HeatShield a non-asbestos E-Glass fibre fabric
- Short duration contact heat protection up to 800°C
- Thickness of 2.2mm
- Lined with T-Gard® N260 Meta-Aramid thermal liner
- Sewn with heat resistant Aramid threads.
- Wear seams welted for extra durability.
- One size fits all

Part Number	Length
TM16WL	406mm
TCM10	230mm - Cover mitt





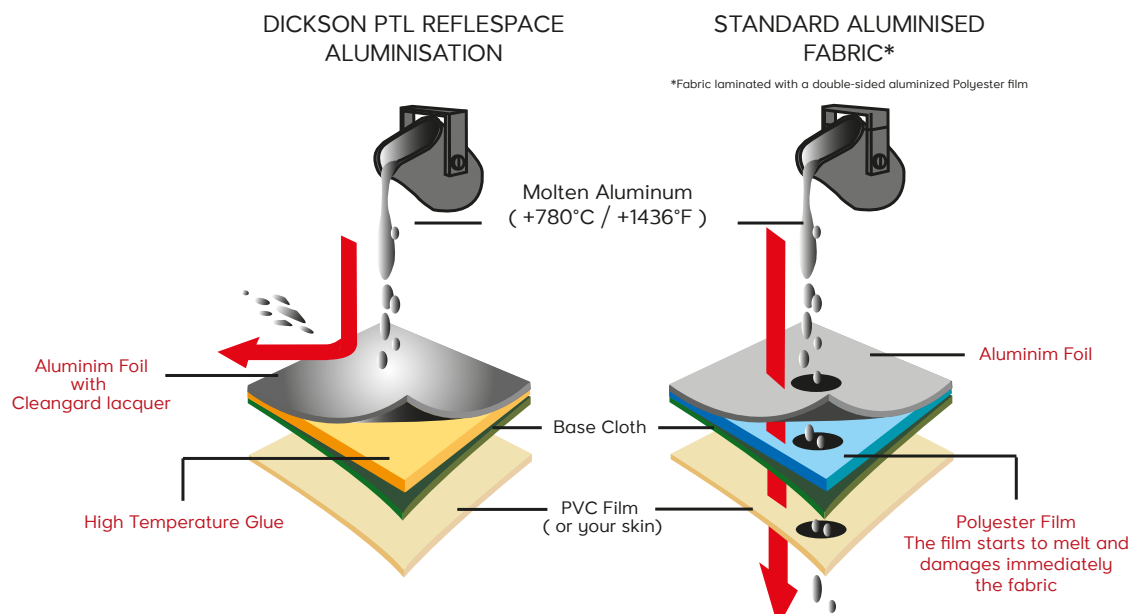
ALUMINISED MATERIALS



Reflespace® technology is a unique aluminisation process offering the best molten metal splash protection today. The Reflespace range of aluminised fabrics incorporates the latest research and development to provide the ideal combination of protection, durability and comfort.

The Reflespace® range of aluminised fabrics is specially designed for Personal Protective Equipment Level 4: “high risks and extreme exposure to radiant heat”.

BEST PROTECTION AGAINST MOLTEN METAL SPLASH



Reflespace® technology advantages:

- Excellent behaviour to ferrous and non-ferrous molten metal splashes
- Outstanding mechanical resistance to abrasion, creasing and delamination → better life expectancy
- Does not melt in contact with flames, heat or molten metals
- Cleangard lacquer: protects and enhances the aluminium reflectance efficiency
- Odourless
- Comfortable and supple

Standards and Testing

- All Reflespace® fabrics have undergone full ISO11612 testing by independent laboratories.

Reflespace® Applications

- Foundries
- Steel industries
- Aluminium and non-ferrous metals industries
- Glass industry
- Cement works
- Firefighters





TBA ALUMINISED FABRICS FOR PROTECTIVE CLOTHING

TBA's aluminised fabrics are widely used to fabricate items of protective clothing such as gloves, mitts, aprons, jackets, trousers and fire proximity suits. These are used within industry to protect workers from heat and welding splash. A variety of base fabrics can be offered depending on the application involved.

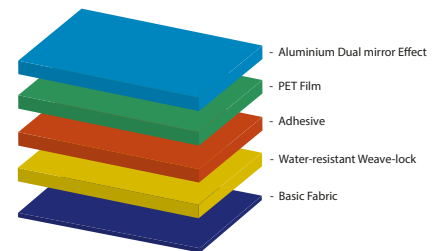
Elliotts utilises the following TBA Fabrics

- Aluminised Preox (preoxidised acrylic) OKA667
- Aluminised meta aramid/para aramid AKA327

The above TBA fabrics have been developed with enhanced resistance to moisture. To achieve this the fabrics, incorporate an additional structured component. This element consists of an elastomeric, water-resistant, weave-lock coating, applied to the surface of the base fabric prior to lamination.

All batches of aluminised fabric for protective clothing undergo a wet-flex test, prior to release to assure the adhesion between the fabric and film.

TBA uses polyester film that is aluminised on both sides, so that some degree of radiant heat protection is still offered when some of the outer layer of aluminium is worn away, thus extending the life of the garment.



CARBONX ALUMINISED FLEECE

We Can Take the Heat

Reduce your potential for fatigue and heat stress.

Unlike other aluminized fabrics that can be rigid and heavy, CarbonX with Z-Flex Aluminization® enhances both protection and comfort for professionals working in molten-metal and high-heat environments. CarbonX aluminized solutions are flexible and lightweight yet still provide maximum temperature resistance and extraordinary protection against molten metal splash. In fact, they are among the lightest materials on the market able to pass the ASTM F955 pour test for molten iron and aluminum.

CarbonX aluminized products incorporate the Newtex® proprietary Z-Flex MLATM process, or multilayer aluminization, which delivers outstanding reflectivity, durability, and flex-bond. Up to 95% of radiant heat can be reflected when CarbonX with Z-Flex Aluminization is deployed properly, with no organic flame contribution.

The high-performance base fabric provides a persistent barrier and maintains its flexibility even after it is aluminized. Constructed to be truly non-flammable, the base fabric will not burn, melt, or ignite; withstands extremely high temperatures; and remarkably sheds spatter, sparks, and other hot liquids and molten metal. Its lighter weight and flexibility also significantly reduce a wearer's potential for fatigue and heat stress.

NON-ALUMINISED MATERIALS



FURNACE FABRIC – OASIS

TenCate Oasis™ is an innovative protective fabric that offers incredible softness, has a lightweight feel and is flexible. It is designed to deliver premium protection against molten metal splash, radiant heat, flame and other smelting hazards. An outstanding value and the best choice among thermal resistant, metal-shedding fabrics, it has been chosen by leading aluminum manufacturers, worldwide, for its protection, comfort and durability.

- Inherently flame-resistant – Flame-resistant, metal shedding protection is built into the fabric so it won't wash or wear out.
- Comfortable to wear – Engineered with an innovative fiber blend, this fabric is designed for excellent softness and flexibility.
- Outstanding value - Long-lasting protection withstands rugged use and repeated industrial launderings.

End Uses: Shirts, Trousers, Coveralls, Jackets and Hoods

Fibre Blend: 50% Lenzing FR/ 40% Wool/ 10% Nylon



FURNACE FABRIC – PR97

PR97® is an internationally recognised leading brand of flame-retardant fabrics that are specifically designed to shed molten aluminium and molten iron splash to the International Performance Standard ISO 11612, without damage to the human skin, providing excellent protection with comfort for personnel exposed to these hazards. PR97 fabrics are also very effective at shedding molten cryolite. PR97 fabrics provide protection against radiant heat, convective heat and electric arc flash.

Bruck Textiles is ISO 9001 Quality Accredited and PR97 fabrics are certified to the requirements of OEKO-TEX® Standard 100.

PR97® is a blend of natural fibres – Merino wool and Lenzing FR®. The flame resistant properties of PR97® are manufactured or “built-in” to the FR viscose fibre, which means the fabrics protection cannot diminish over time through washing or laundering; unlike some treated or chemically coated products where their protection can diminish through use. The main benefit of PR97® is its superior molten metal splash protection against a variety of metals including aluminium, cryolite, iron, steel, copper, magnesium and nickel.

End Uses: Shirts, Trousers, Coveralls, Jackets and Hoods

Please visit www.elliotts.net for full range details





CARBONX REPEL

No Threat Is Too Small. See it shed splash, spatter, and sparks like no other fabric.

CarbonX Repel™ is designed to defend against numerous hazards in one single garment. With a proprietary compound added to its fiber blend, Repel remarkably sheds molten metal, certain chemicals, flammable liquids, and other molten substances while providing extraordinary protection against extreme heat and direct flame. Sparks and spatter simply roll off the woven material.

Repel is one of the few non-aluminized, flame-resistant fabrics able to pass the ASTM F955 pour test for molten iron and aluminum. Its flammability performance, as measured by the thermal mannequin test, is also extraordinary, with only 15–20% of the mannequin surface reaching criteria for a second- and third-degree burn.

Repel is significantly lighter than other similar application protective options. Its lighter weight increases a wearer's comfort and productivity as it decreases the amount of muscle exertion and heat stress that builds up over the course of a work shift. Although Repel is water resistant, micropores in the fabric make it breathable, further enhancing comfort.

End Uses: Jackets, Over Trousers and Hoods



WELDWOOL

WOOL IS NATURALLY FLAME RESISTANT!

Because of the way the wool fibre is structured, wool requires more oxygen than is available in the air to become flammable. Wool is accordingly an excellent fibre when it comes to fire safety. Furthermore, it does not melt, drip or stick to the skin when it burns. Wool's fire resistant attributes include:

- A very high ignition temperature – 570-600° C
- A high Limiting Oxygen Index (LOI).
This is the measure of the amount of oxygen needed to sustain combustion
- A low heat of combustion – the measure of the amount of heat energy released in the burning process
- Does not melt or stick
- Self-extinguishing

Wool's inherent fire resistance comes from its naturally high nitrogen and water content. Because of these, wool requires higher levels of oxygen in the surrounding environment in order to burn. Wool may be ignited if subjected to a significantly powerful heat source, but does not normally support flame, and will instead smoulder – usually only for a short time. In addition, wool's cross-linked cell membrane structure will swell when heated to the point of combustion, forming an insulating layer that prevents the spread of flame. This also means that wool produces less smoke and toxic gas than synthetic fibres.

End Uses: Jackets, Over Trousers and Hoods

Fibre Blend: 100% Wool



STORAGE AND CARE OF YOUR FURNACE PPE

To ensure PPE remains effective, regular maintenance and correct storage is required. Examples of how to controls the risks include:

- maintaining protective equipment and clothing provided to workers in a sound condition
- testing PPE routinely and checking it is capable of performing the protective functions for which it was provided
- training workers about how to use, care for and correctly fit the PPE
- ensure equipment and clothing is only worn by the worker to whom it was issued, and can be marked with the name of the worker
- providing clean storage for protective equipment and clothing
- maintain clothing and equipment when required and in the manner prescribed by the manufacturer or supplier.

Protective clothing must be replaced when it is no longer capable of providing the necessary protection, for example when it is damaged or worn.



OTHER ELLIOTTS PRODUCTS – GLOVES AND HAND PROTECTION



WELDING GLOVES MIG



BIG RED



KEVLAR BLUE



LEFTIES



BGFLW16

WELDING GLOVES TIG



TIGMATE PRO C5



TIGMATE RX



TIGMATE RT



TIGMATE

G-FLEX TECHNICAL



ORANGE T-TOUCH



AIRTOUCH C5



ROUSTABOUT



STEELER

MEC-FLEX MECHANICS GLOVES



OILER



UTILITY PRO



RIGGER



QUICKFIT

HANDLING GLOVES



WESTERN RIGGER



WESTERN RIGGER C5



TMKB10P



KB436A

Please visit www.elliotts.net for full range details

OTHER ELLIOTTS PRODUCTS – WELDING & WORKSHOP PROTECTION



WELDING PROTECTIVE CLOTHING



BIGRED WELDING JACKET



WAKATAC WELDING JACKET
WITH CHROME LEATHER SLEEVES



GOLDEN CHIEF
WELDING JACKET



CHROME LEATHER
WELDING JACKET



CHROME LEATHER SPATS



GOLDEN CHIEF SPATS



CHROME LEATHER APRON

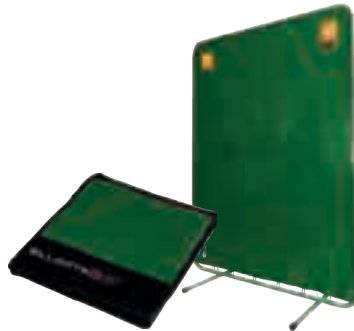


WAKATAC WELDING HOOD

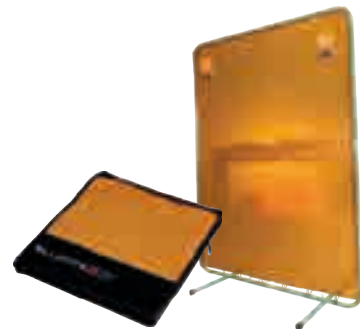
WELDING SCREENS



ARCSAFE WELDING SCREEN

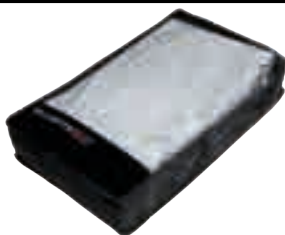


ARCSAFE WELDING SCREEN



ARCSAFE WELDING SCREEN

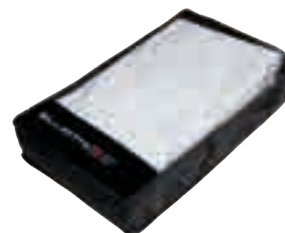
BLANKETS AND DRAPES



HEATSHIELD



NEOWELD



CHROME LEATHER DRAPE

Please visit www.elliotts.net for full range details



OTHER ELLIOTTS PRODUCTS – SPECIALISED PROTECTIVE CLOTHING & PPE



ARCFLASH PROTECTIVE CLOTHING



FIREFIGHTING PROTECTIVE CLOTHING



CHEMTECH CHEMICAL SPLASH PROTECTIVE CLOTHING



WET AND COLD WEATHER PROTECTIVE CLOTHING



PYRAMEX PPE



BIG JIM CHAINSAW PROTECTIVE CLOTHING



Please visit www.elliotts.net for full range details

ELLIOTTS QUALITY SAFETY GEAR



50 *Years*
1966 - 2016



Quality
ISO 9001
SAI GLOBAL

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TAKE CARE

