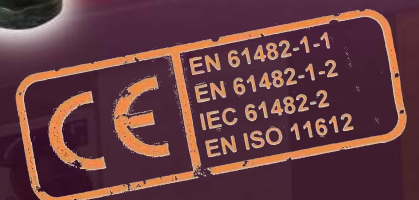


# CLYDESDALE

Powering the Future

## Arc Flash





# CLYDESDALE

## Powering the Future



### Trust the No.1...

Clydesdale is the leading specialist in overhead line and cable installation associated tools and personal protective equipment (PPE) for the Electricity and Telecommunication industries.

### Expertise...

For many years Clydesdale has been supporting the Electricity and Telecommunication industries worldwide. If you have a job that requires a bespoke solution, utilise our expertise, talk to Clydesdale.

If you have questions or require further information please contact our Customer Services Department on +44 (0)1234 855855 who will be pleased to answer your request.

### Quality

Clydesdale are an ISO9001:2000 company. This represents our commitment to quality, not only through our products but also in the service and internal workings of the company.



Further to this we are continually assessed by an EU notified body under Article 11B of the PPE directive to ensure our NOAH range is produced to the highest quality.

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## IMPORTANT SAFETY INFORMATION

### Arc Protection Clothing Requirements

Whenever possible, always de-energise circuits before working on or around them.

### Employer Legislation:

Several layers of legislation exist within the UK and Europe that govern the need to assess workplace risks (including live electrical work), mitigate these risks and provide Personal Protective Equipment (PPE) where a risk still remains.

This legislation is available for free download along with guides on using and implementing their requirements from the Health and Safety Executive in the UK from [www.hse.gov.uk](http://www.hse.gov.uk) and also by corresponding bodies across Europe.

The key pieces of legislation affecting the electrical industry, the risk of Arc Flash and using electrical PPE are:

- Health And Safety At Work Act 1974 (HASAWA). This is the “umbrella” legislation that defines how workplace health, safety and welfare is controlled.
- Management of Health and Safety at Work Regulations 1999. A more detailed document that covers the principles needed to ensure workplace health and safety. This covers the need to carry out risk assessments.
- Personal Protective Equipment at Work Regulations 2002. This implements the requirements of the European PPE directive. More details are shown below.
- Provision and Use of Work Equipment Regulations 1998 (PUWER). Covering the provision of safe working equipment and the training in its operation.
- Electricity at Work Regulations 1989. General electrical regulations that cover working on or around electrical equipment including live systems.

### Arc Flash Personal Protective Equipment (PPE)

In Europe any PPE sold must meet the requirements of the PPE directive 89/686/EEC. This is implemented in the UK as part of the Personal Protective Equipment at Work Regulations (2002).

It gives the categories that PPE conforms to and how their performance and production should be controlled. Arc Flash protective clothing is “Category III” PPE and must be type approved and the production must be fully audited. This is the regulation under which a CE mark may be issued. A CE mark may not be applied to Arc Flash clothing unless both Type Approval (Article 10) and an Assessment of production Quality (Article 11A or 11B). Without these documents Arc Flash PPE may not be sold.

Arc Flash clothing is now built to meet the requirements of several new and updated technical specifications and standards. The key ones being:

- BS EN 61482-1-1. This Test Method covers the “open” or unconstrained arc testing of material and garments. The result of this testing is an “arc rating”, commonly given as an Arc Thermal Performance Value (ATPV) or Breakopen Threshold Energy (EBT50). This is usually given in units of calories per square centimetre (cal/cm<sup>2</sup>). The test method requires that BOTH materials and garments produced from them must be tested before they may be CE marked.

- BS EN 61482-1-2. This Test Method covers the “box” or constrained arc testing of material and garments. The result of this testing is a “protection class”, either Class 1 (4000 Amps) or Class 2 (8000 Amps). With only 2 basic levels this is a very coarse method of assessing arc protection and the UK technical committee responsible for these standards suggests BS EN 61482-1-1 is the better test method. The test method requires that BOTH materials and garments produced from them must be tested before they may be CE marked.
- IEC 61482-2. An international standard that hasn’t yet been “harmonised” across Europe due to the way that the “arc rating” calculation described in the EN 61482-1 series of tests(1). IEC 61482-2 is a technical specification that defines how to build Arc Flash garments. It does not cover handwear, headwear or footwear.
- BS EN ISO 11612. An international standard that covers clothing that protects against heat and flame. The requirements of this standard provide a good grounding and construction guidelines for Arc Flash clothing and so should always be used. As with the Arc Flash test methods, completed garments should be assessed not just fabrics. Code Letters are applied that define the type of heat and flame with which a garment has been tested.

### Specifying Arc Flash Protective Equipment

- Always complete an Arc Flash risk assessment on all equipment that will be operated or worked on live. This meets your regulatory requirements as discussed above and provides the key information such as incident energy used to drive risk reduction and PPE selection if required. Best practice for carrying out an assessment is given in IEEE1584-2002.
- Mitigate arc risks. Reduce instances of live working, distance workers from sources of arcs, implement arc reduction and suppression technologies or reconfigure electrical networks to reduce the intensity of potential arcs.
- Any residual risks may then be met with PPE if needed. PPE should be selected based on the following:
  - Arc protection rating of garment must be greater than the Potential Incident energy resulting from an electric arc.
  - Wearability of clothing must ensure that workers can and will use PPE under all circumstances encountered.
  - Durability to ensure protection offered lasts for the life of the garment and will need to wash out.
  - Suitability of the style and cut of the clothing to meet the needs of the workers and the tasks they carry out.

### Clydesdale AR Fabric

Clydesdale uses Westex Indura Ultra Soft® exclusively. Indura Ultra Soft® blend of 88% cotton and 12% high tenacity nylon substantially increase the fabric’s abrasion resistance, helping the garment last over 50% longer than 100% cotton garments. Plus the new softer feel further enhances the breathable ‘all-weather’ comfort of cotton. The treatment process for Indura flame resistant fabrics forms a long chain flame retardant polymer impregnated into the core of each cotton fibre. Guaranteed flame resistant for the life of the garment. An excellent value equation.



## Alternative Methods of Assessing Risk – NFPA 70E and Hazard Risk Categories

Electrical safety and Arc Flash risk assessments are carried out in the USA in accordance with NFPA 70E which covers Electrical Safety Requirements for Employee workplaces.

It gives guidance on conducting the risk assessments and, subsequently, categorising risks and appropriate PPE.

It can be viewed online at <http://www.nfpa.org>.

NFPA 70E categorises electrical arc risks into one of five Hazard Risk Categories (HRC) shown below.

<div>HAZARD RISK CATEGORY</div> <div>0</div> <div>Protective Clothing, Non melting or Untreated Natural Fibre with a Fabric Weight of at least 152 g/m<sup>2</sup></div> <div>Long-Sleeve Shirt</div> <div>Long Trousers</div> <div>Safety Glasses or Safety Goggles (SR)</div> <div>Hearing Protection (Ear canal plugs)</div> <div>Heavy Duty Leather Gloves (AN)*</div>	<div>HAZARD RISK CATEGORY</div> <div>1</div> <div>Minimum Arc rating of 4 cal/cm<sup>2</sup></div> <div>Arc-Rated Long-Sleeve Shirt and Trousers or Arc Rated Coverall</div> <div>Arc-Rated Face shield or Arc Flash Suit Hood</div> <div>Arc –Rated Jacket, Parka, or Rainwear (AN)</div> <div>Safety Glasses or Safety Goggles (SR)</div> <div>Hearing Protection (Ear canal plugs)</div> <div>Heavy Duty Leather Gloves*</div> <div>Leather Work Shoes (AN)</div>	<div>HAZARD RISK CATEGORY</div> <div>2</div> <div>Minimum Arc rating of 8 cal/cm<sup>2</sup></div> <div>Arc-Rated Long-Sleeve Shirt and Trousers or Arc Rated Coverall</div> <div>Arc-Rated Face shield &amp; Arc-Rated Balaclava or Arc Flash Suit Hood</div> <div>Arc-Rated Jacket, Parka, or Rainwear (AN)</div> <div>Hard Hat</div> <div>Safety Glasses or Safety Goggles (SR)</div> <div>Hearing Protection (Ear canal plugs)</div> <div>Heavy Duty Leather Gloves*</div> <div>Leather Work Shoes</div>
<div>HAZARD RISK CATEGORY</div> <div>3</div> <div>Minimum Arc rating of 25 cal/cm<sup>2</sup></div> <div>Arc-Rated Long-Sleeve Shirt (AR)</div> <div>Arc-Rated Trousers (AR)</div> <div>Arc-Rated Coverall (AR)</div> <div>Arc-Rated Arc Flash Suit Jacket (AR)</div> <div>Arc-Rated Arc Flash Suit Trousers (AR)</div> <div>Arc-Rated Arc Flash Suit Hood</div> <div>Arc-Rated Gloves or Rubber Insulating Gloves with Leather Protectors (SR)</div> <div>Arc-Rated Jacket, Parka, or Rainwear or Hard Hat Liner (AN)</div> <div>Hard Hat</div> <div>Safety Glasses or Safety Goggles (SR)</div> <div>Hearing Protection (Ear canal plugs)</div> <div>Leather Work Shoes (AN)</div>	<div>HAZARD RISK CATEGORY</div> <div>4</div> <div>Minimum Arc rating of 40 cal/cm<sup>2</sup></div> <div>Arc-Rated Long-Sleeve Shirt (AR)</div> <div>Arc-Rated Trousers (AR)</div> <div>Arc-Rated Coverall (AR)</div> <div>Arc-Rated Arc Flash Suit Jacket (AR)</div> <div>Arc-Rated Arc Flash Suit Trousers (AR)</div> <div>Arc-Rated Arc Flash Suit Hood</div> <div>Arc-Rated Gloves or Rubber Insulating Gloves with Leather Protectors (SR)</div> <div>Arc-Rated Jacket, Parka, or Rainwear or Hard Hat Liner (AN)</div> <div>Hard Hat</div> <div>Safety Glasses or Safety Goggles (SR)</div> <div>Hearing Protection (Ear canal plugs)</div> <div>Leather Work Shoes (AN)</div>	

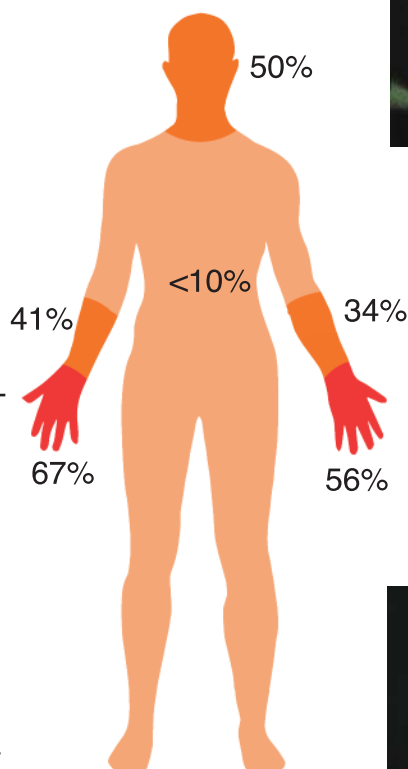
## What is an Arc Flash?

An Arc Flash is an unintentional, explosive electrical event caused by either short circuits, switching faults or switching circuits when under load.

An arc initiates between two electrodes (although it may expand to include more electrodes in a 3 phase system) and can quickly result in temperatures approaching 20000°C along with an explosive pressure wave, intense UV /visible / IR light, high-speed ejected material, molten metal and toxic gases.

Any one of these phenomena can result in serious personal injury and infrastructure damage, together they may be deadly. For this reason the risks associated with electrical arcing in the work place must be assessed and appropriate preventive and protective measures put in place. Many technologies and methods exist to reduce the likelihood and size of an electric arc occurring and these should be considered as part of an overall approach to arc risk reduction. Clydesdale's PPE range forms a part of this overall approach.

A German study in 1998 assessed the distribution of burn injuries on the bodies of those exposed to Arc Flash events. The worst affected areas were the hands, head and neck. The figure (right) shows this in a pictorial format. This highlights the need, when considering PPE, to ensure the proposed solution is assessed as a whole rather than just taking single Arc Flash protective garments that protect a specific area of the body.



## How is Arc Flash PPE tested?

All of Clydesdale's PPE is tested to the highest level of European and international standards. Not all types of Arc Flash PPE currently have dedicated European or International standards but we ensure that any items we supply have the broadest relevant spectrum of testing in place to maximise user protection.

Clydesdale invest continually in testing, certification and approval for its products. Our NOAH range, for instance, is continually subjected to external assessment to make sure it meets the highest quality standards.

All CE marked garments have to be tested:

- At the fabric level to ensure it can protect the wearer from burns.
- As a complete, assembled garment to ensure it remains intact and operates correctly after being exposed to an arc.







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CLY 582 124



CLY 583 100



### The NOAH Range

Clydesdale's NOAH range of Arc Flash everyday workwear has been developed especially for workers who are in regular or occasional contact with electrical apparatus that could result in their exposure to an Arc Flash.

Purposely designed to be both comfortable and durable as well as smart and easy to wear, the NOAH range of arc clothing is produced from the field proven Westex Indura Ultra Soft® fabrics.



**'Permanently Arc resistant,  
guaranteed for the life of the  
garment irrespective of the  
number of washes'**

As safety is paramount with this type of PPE, the garments are designed to prevent pockets or folds accumulating molten metal. Patch pockets have overhanging Velcro fastened flaps, stress points are bar tacked and closures are covered for protection in the event of an arc incident.

The NOAH range has been recertified to all the latest European and International standards covering Arc Flash and flame retardancy. The NOAH garments and the process used to assemble them are continuously assessed by an EU approved Notified Body to ensure our customers always get a product of the upmost quality.



### Layering of NOAH garments

Clydesdale have tested and certified certain combinations of AR garments as a layered system. This allows the user to increase protection for certain, higher risk tasks by wearing an extra protective layer or to have a permanent higher level of protection without having to wear a full switching suit.

Any NOAH top layer worn over a NOAH rugby shirt offers a fully CE marked and type approved 37 cal/cm² ATPV and Arc class 2 protection.

Any NOAH top layer worn with CarbonX underwear also offers CE marked and type approved Arc Class 2 Protection

Only these combinations have been tested. Please contact us if you require information on a garment combination not shown.

### CarbonX Active Underwear

The Carbon X Active range of underwear is offered by Clydesdale to provide CE marked and type-approved Arc Class 2 protection when worn with NOAH garments. It is also offered as a solution to those requiring reliable AR underwear for wearing in the winter for comfort.

The underwear range is made from a comfortable, breathable double-knit fabric designed to wick away moisture from the skin. This allows it to offer warmth in the winter without causing sweating and overheating in the summer.

We offer a long-sleeve top in sizes S-3XL and long johns in sizes S-3XL.

A sizing guide is available on request or on our website.

Part No.	Description	Sizes available
CLY 583 100	CarbonX Long Johns	0-5 (S-3XL)
CLY 586 100	CarbonX Long-Sleeve Top	0-5 (S-3XL)



## NOAH Coverall

- 12.4 cal/cm<sup>2</sup> protection, garments tested to EN 61482-1-1, Method B
- CE marked Arc Rating as well as EN61482-1-2 (Class 1, 4kA,0.5s), IEC 61482-2 and EN ISO 11612 A1 A2 B1 C1
- Conforms to NFPA 70E Hazard Risk Category 2
- Silver grey & navy 305g/m<sup>2</sup> twill fabric
- Zip front closure with Velcro storm flap
- Adjustable elasticated back with action-back pleats for added comfort
- Elasticated wrist cuffs
- Boot access zip on legs
- Extra fabric wear layer around knees for extended durability
- Custom corporate AR logos available
- Two external breast patch pockets, one external rear right patch pocket
- Internal side pockets with trouser access slit
- Mobile phone/pen pocket on left sleeve
- Cargo patch pocket on left leg
- Available in sizes XS to 6XL, R(30") or T(32") leg lengths. See page 11 for sizing

Part No.	Description
CLY 582 124	12.4 cal/cm <sup>2</sup> protection NOAH Coverall



CLY 582 124



## NOAH Trousers

- 12.4 cal/cm<sup>2</sup> protection, garments tested to EN 61482-1-1, Method B
- CE marked Arc Rating as well as EN61482-1-2 (Class 1, 4kA,0.5s), IEC 61482-2 and EN ISO 11612 A1 A2 B1 C1
- Conforms to NFPA 70E Hazard Risk Category 2
- Navy 305g/m<sup>2</sup> twill fabric
- Zip covered by extra wide flap with concealed fly button
- Elasticated waist sections for optimum fit
- Custom corporate AR logos available
- External rear right patch pocket and internal side pockets
- Cargo patch pocket on left leg
- Internal knee pad pocket
- Available in waist sizes 30, 32, 34, 36, 38, 40, 42, 44 and 46 and leg lengths R (30"), T(32") and X(34")

Part No.	Description
CLY 583 124	12.4 cal/cm <sup>2</sup> protection NOAH Trousers



CLY 583 124



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CLY 584 124



CLY 585 124



CLY 587 109



## NOAH Lab Coat

- 12.4 cal/cm<sup>2</sup> protection, garments tested to EN 61482-1-1, Method B
- CE marked Arc Rating as well as EN61482-1-2 (Class 1, 4kA, 0.5s), IEC 61482-2 and EN ISO 11612 A1 A2 B1 C1
- Conforms to NFPA 70E Hazard Risk Category 2
- Silver grey and navy 305g/m<sup>2</sup> twill fabric
- Press stud front closure
- Custom corporate AR logos available
- External left breast patch pocket
- Two front side external patch pockets
- Mobile phone/pen pocket on left sleeve
- Available in sizes XS – 6XL. See page 11 for sizing

Part No.	Description
CLY 584 124	12.4 cal/cm <sup>2</sup> protection NOAH Lab Coat

## NOAH Jacket



- 12.4 cal/cm<sup>2</sup> protection, garments tested to EN 61482-1-1, Method B
- CE marked Arc Rating as well as EN61482-1-2 (Class 1, 4kA, 0.5s), IEC 61482-2 and EN ISO 11612 A1 A2 B1 C1
- Conforms to NFPA 70E Hazard Risk Category 2
- Silver grey & navy 305g/m<sup>2</sup> twill fabric
- Zip front closure with Velcro storm flap
- Expanding action-back pleats for added comfort
- Popper fastened wrist cuffs
- Custom corporate AR logos available
- Two external breast patch pockets
- Mobile phone/pen pocket on left sleeve
- Rear flap to ensure overlap with trouserseve
- Available in sizes XS – 6XL. See page 11 for sizing

Part No.	Description
CLY 585 124	12.4 cal/cm <sup>2</sup> protection NOAH Jacket

## NOAH Long Sleeve Rugby Shirt



- 10.9 cal/cm<sup>2</sup> protection, garments tested to EN 61482-1-1, Method B
- CE marked Arc Rating as well as EN61482-1-2 (Class 1, 4kA, 0.5s), IEC 61482-2 and EN ISO 11612 A1 A2 B1 C1
- Conforms to NFPA 70E Hazard Risk Category 2
- Navy 205g/m<sup>2</sup> interlock knit T-shirt style fabric
- Elasticated cuffs
- Stiffer twill fabric rugby style collar for improved shape and fit
- Concealed plastic press stud collar closure
- Custom corporate AR logos available
- Not recommended for industrial laundering
- Available in sizes XS – 6XL. See page 11 for sizing

Part No.	Description
CLY 587 109	10.9 cal/cm <sup>2</sup> protection NOAH Long Sleeve Rugby Shirt



## NOAH Winter Wear



In response to the cold winters we have experienced in recent years, Clydesdale have developed a range of CE marked range of NOAH winter wear

The Sweatshirt and Winter jacket are designed, made and approved to the same exacting standards as the rest of our NOAH range and are sized to match.

## NOAH Fleece



The fleece is cut generously to make it easy to wear when needed, ensuring the highest level of safety for the wearer while keeping you warm and comfortable. It is constructed from an AR sweat fabric that looks and feels like conventional clothing.

The garment offers:

- EN61482-1-1 Arc Rating of 17.9 cal/cm<sup>2</sup> (Ebt50)
- EN61482-1-2, Arc Class 2 (7kA, 0.5s)
- Ribbed, elasticated waist, cuffs and collar for comfort
- Navy Blue
- CE marked.

Part Number	Description	Sizes available
CLY 586 179	NOAH Fleece	0-9 (XS-6XL)

## NOAH Winter Jacket



The NOAH winter Jacket is, again, cut generously to make it easy to wear when needed so it can be worn over existing NOAH garments in comfort.

It is constructed from the same AR fabric as a conventional NOAH jacket but with an extra insulative, quilted AR layer inside for warmth. It is cut longer and has waist adjustment to keep out the cold.

The garment offers:

- EN61482-1-1 Arc Rating of 35.9 cal/cm<sup>2</sup> (ATPV)
- EN61482-1-2, Arc Class 2 (7kA, 0.5s)
- High Necked with full length zip.
- Storm flap on Zip
- Internal phone and pen pockets
- Waist adjusters
- Navy Blue / Silver Grey
- CE marked

Part Number	Description	Sizes available
CLY 585 359	NOAH Winter Jacket	0-9 (XS-6XL)



CLY 586 179



CLY 585 359



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## NOAH Arc Flash protection kits

Clydesdale offer arc flash protection kits based around NOAH garments. These contain the items shown below in one simple-to-order kit.

The kit contains the following items:

- NOAH Jacket & Trousers or NOAH Coverall
- AS12UHCE Face Shield and hard hat
- AS12-CE Storage bag
- Arc Flash balaclava
- Arc Flash kit bag

Gloves are not included due to the number of variants available. A glove kit CLY 556 GK should be ordered separately. Please contact us for details.

For enhanced protection on the chest and arms (ATPV: 37 cal/cm<sup>2</sup> and Arc class 2) please see layering details on page 6.

## Kits with Jacket and Trousers

Part No.	Jacket Size	Trouser Size
CLY 589 012	0-9 (XS-6XL)	30R-46X

### Example: CLY 589 012 3 34T

This is a NOAH Arc Flash protection kit with a Large Jacket and 34 Waist / 32 Leg Trousers.

## Kits with Coveralls

Part No.	Coverall Size	Leg Length
CLY 582 KIT	0-9 (XS-6XL)	R (30") or T (32")

### Example: CLY 582 KIT 3R

This is a NOAH Arc Flash protection kit with coveralls in size 3R (Large with regular leg).

## Custom Corporate AR Logos

Clydesdale can supply clothing with special heat-sealable AR corporate logos designed for industrial laundering. Please contact us with your individual requirements.



## NOAH Garment Part Numbering Information







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### Clydesdale PRO-HOOD™ Arc Flash Protection Hood

- 20 cal/cm<sup>2</sup> to 100 cal/cm<sup>2</sup> protection
- 88% cotton / 12% Nylon AR fabric
- Arc rated 10" x 20" (254 x 508mm) anti-fogging amber lens
- Universal hard hat bracket included
- Hard hat not included – **Please see CLY 540 SA79R03**
- One size fits all
- Replacement lenses are available for this product. Visit [www.clydesdale.net](http://www.clydesdale.net) for details

Part No.	Description
CLY 571 020	20 cal/cm <sup>2</sup> navy blue
CLY 571 031	31 cal/cm <sup>2</sup> royal blue
CLY 571 040	40 cal/cm <sup>2</sup> grey
CLY 571 055	55 cal/cm <sup>2</sup> grey
CLY 571 075	75 cal/cm <sup>2</sup> grey
CLY 571 100	100 cal/cm <sup>2</sup> khaki, Tuff Weld



### Clydesdale PRO-WEAR™ Arc Flash Jackets

Dual stage front closure with plastic zip and AR Velcro storm flap

- 20 cal/cm<sup>2</sup> to 100 cal/cm<sup>2</sup> protection
- 88% cotton / 12% Nylon AR fabric
- Available in sizes S, M, L, XL, 2XL and 3XL
- Jackets designed to interface with PRO-HOOD™

Part No.	Description
CLY 574 020	20 cal/cm <sup>2</sup> , navy blue
CLY 574 031	31 cal/cm <sup>2</sup> , royal blue
CLY 574 040	40 cal/cm <sup>2</sup> , grey
CLY 574 055	55 cal/cm <sup>2</sup> , grey
CLY 574 075	75 cal/cm <sup>2</sup> , grey
CLY 574 100	100 cal/cm <sup>2</sup> , khaki, Tuff Weld

**Note:** Add suffix for desired size, S, M, L, XL, 2XL, 3XL.

Dual stage front closure with plastic zip and AR Velcro storm flap.

## Clydesdale PRO-WEAR™ Arc Flash Protection Bib Overalls

- 20 cal/cm<sup>2</sup> to 100 cal/cm<sup>2</sup> protection
- 88% cotton / 12% Nylon AR fabric
- Bib front for added protection with integrated heavy duty braces
- Relaxed cut for greater mobility with adjustable Velcro waist straps
- Easy-on boot access
- Available in sizes S, M, L, XL, 2XL and 3XL

Part No.	Description
CLY 573 020	20 cal/cm <sup>2</sup> , navy blue
CLY 573 031	31 cal/cm <sup>2</sup> , royal blue
CLY 573 040	40 cal/cm <sup>2</sup> , grey
CLY 573 055	55 cal/cm <sup>2</sup> , grey
CLY 573 075	75 cal/cm <sup>2</sup> , grey
CLY 573 100	100 cal/cm <sup>2</sup> , khaki, Tuff Weld

**Note:** Add suffix 'S' for small, 'M' for medium, etc.

## Clydesdale PRO-WEAR™ Arc Flash Protection Coveralls

- 20 cal/cm<sup>2</sup> protection
- Full cut with set-in sleeves
- Front flame retardant Velcro closure
- Available in sizes S, M, L, XL, 2XL and 3XL

Part No.	Description
CLY 572 020	20 cal/cm <sup>2</sup> , navy blue

**Note:** Add suffix 'S' for small, 'M' for medium, etc.

## Arc Flash Protection Kits

### Kits with Coveralls

Part No.	cal/cm <sup>2</sup> Rating	Glove Class	Glove Size	Garment Size
CLY 575	020	0 or 2	08, 09, 10 or 11	S = 1, M = 2, L = 3, XL = 4, 2XL = 5 or 3XL = 6

### Example

CLY 575	020	2	09	3
---------	-----	---	----	---

**CLY 575 020 2093** is an Arc Flash protection kit with a rating of 20 cal/cm<sup>2</sup> containing 14" Black Gloves, Class 2, Size 9, Orange SA29 Hard Hat, T565 BC Safety Glasses, PRO-WEAR™ Coveralls size L, PRO-HOOD™ Arc Flash Protection Hood, Glove Storage Bag all supplied in Arc Flash Kit Bag.



CLY 573 020



CLY 573 031



CLY 573 040



CLY 572 020



CLY 575 020 1093



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CLY 576 020 0103



CLY 576 040 2094

## Kits with Bib Overalls & Jackets

Part No.	cal/cm <sup>2</sup> Rating	Glove Class	Glove Size	Garment Size
CLY 576	020	0 or 2	08, 09, 10 or 11	S = 1,
CLY 576	031	0 or 2		M = 2,
CLY 576	040	2		L = 3,
CLY 576	055	2		XL = 4,
CLY 576	075	2		2XL = 5
CLY 576	100	2		or 3XL = 6

## Example

CLY 576	040	2	09	4
---------	-----	---	----	---

**CLY 576 040 2094** is an Arc Flash protection kit with a rating of 40 cal/cm<sup>2</sup> containing Black 14" Rubber Insulating Gloves Class 2 size 9, Leather Protector Gloves 12" size 9, Orange Hard Hat SA29, T565 BC Safety Glasses, PRO-WEAR™ Flash Protection Bib Overalls size XL, PRO-WEAR™ Flash Jacket size XL, PRO-HOOD™ Arc Flash Protection Hood, Glove Storage Bag all supplied in Arc Flash Kit Bag.

## Size Selector Chart

Size	Chest	Waist	Inside Leg	Size Code
S	34-36"	28-30"	28"	1
M	38-40"	32-34"	29"	2
L	42-44"	36-38"	30"	3
XL	46-48"	40-42"	30"	4
2XL	50-52"	44-46"	30"	5
3XL	54-56"	48-50"	30"	6



# STOP PRESS

## Clydesdale's 40 cal/cm<sup>2</sup> Lift Front Hood – CLY 540 LFH40

Clydesdale's revolutionary Lift Front Hood is a unique hybrid combination hood that is lighter and more comfortable to wear than a standard arc flash hood. The combination of a wider face shield and transparent chin guard more than doubles the vertical peripheral vision one would experience while wearing a standard hood and offers the user greater outward visibility and access to natural light.

The Lift Front Hood uses significantly less fabric than standard arc flash hoods. This reduction in fabric allows for more natural head movement and eliminates the need for frequent hood adjustments due to shifts in the excess fabric.

In addition to increased visibility and comfort, the Lift Front Hood offers an extra level of safety protection for the user as it allows for increased breathability. The industrial bracket design creates a natural ventilation system that allows carbon dioxide and heat to escape as it rises from the body.

Lift Front Hood's visibility, fabric weight, breathability and lifting features make it a pioneer in the fusion of comfort and safety in arc flash protection products. Salisbury by Honeywell is proud to take the lead in introducing this revolutionary product to the marketplace.

### Visibility

- Polycarbonate shield and chin guard offer an additional 45 degrees of vertical view over standard fabric hoods.
- Vertical peripheral vision field increases by 109% which allows for a clearer view of surroundings.
- Contoured lens naturally extends range of peripheral vision giving users greater outward visibility and more access to natural light.
- Allows for use of task lights to add much needed convenience lighting in dark work places.

### Comfort

- Contains 60% less fabric weight than standard hoods which makes it lighter and more comfortable to wear.

### Dimensions and Weights

Weight	1.04kg (2.3lbs)
Dimensions	50.8cm High x 26.6cm wide x 27.9cm deep
Viewing Area	50.8cm wide x 19 cm deep

<b>Fabric</b>	
Arc Rating	40 cal/cm <sup>2</sup> (ATPV)

### Standards and Test Methods

NFPA 70E
ASTM F2178
ASTM F1506
Arc Testing and CE marking for Europe pending





# CLYDESDALE

## Powering the Future



CLY 421 010



CLY 421 Special



CLY 540 SA79R03



CLY 571 920



CLY 545 5511 RB

Kit Bag Part No.	Description
CLY 421 010	Large Kit bag for storing Clydesdale PRO-WEAR™ Arc Flash Clothing, gloves and other accessories
CLY 421 Special	Large black canvas Arc Flash kit bag with customer branding

### 1000V Hard Hat/Standard Hard Hat

Clydesdale offers an EN397 and EN50365 certified electrician's hard hat that bears the CE, double triangle, 440V and Class 0 (1000V) markings. This offers all the features of a conventional hard hat whilst ensuring the wearer's head is protected from accidental contact with live voltages..

Part No.	Description
CLY 540 SA79R03	Hard hat – Class 0 – 1000V rated

### “ACAIR2000” Arc Flash Hood Air System

The new ACAIR2000 Arc Flash Hood Air System has been designed to blow forced ambient air through a single intake hose, providing a fresh air supply to the wearer. This system minimises the hazardous effects of shield fogging and helps to reduce fatigue.

Part No.	Description
CLY 571 920	ACAIR2000 Arc Flash Hood Air System

### Arc Protection Baseball Hood – with Ear Protection



Designed to be worn all day, the Arc Protection Baseball Hood features a lightweight, comfortable design based upon a common baseball cap. Whilst offering no mechanical bump protection the Baseball Hood is rated as Arc Class 1 under GS-ET-29 as well as being compliant with EN166. We are also able to offer upgraded screens to fit this hood with increased arc performance, if required.

Part No.	Description
CLY 545 5511 RB	Arc protection baseball hood with ear protection



## 14 cal/cm<sup>2</sup> Version

Clydesdale have developed and CE marked an upgrade to the existing baseball hood that allows it to be purchased with an extended performance range above that of the standard hood. The 14 cal/cm<sup>2</sup> version has a yellow tinted visor, an Arc Rating of 14cal/cm<sup>2</sup> (ATPV – in accordance with ASTM F2178) and meets GS-ET-29, Class 2. Please contact us for details.

## Bump Cap Version

We are now able to offer a CE marked variant of the baseball hood with an integrated bump cap for added wearer protection. Please enquire for more details.

## Hard Hat Visor with Apron

The unique elastic band design allows the visor to be installed on virtually all hard hats in use today. The visor screen protects the wearer from both the force of the arc as well as the debris associated with an arc incident. The apron is designed and proven to deflect the energy of the arc away from the wearer's face. With other arc protection visors it has been proven that the arc will travel down the visor and then travel up and under the visor, therefore creating huge temperatures on the wearer's face.

## 12 cal/cm<sup>2</sup> Weight Balanced Face Shield

AS12 is a family of high performance arc flash visors. Available as an integrated system complete with helmet or as a Universal mount system for use with a broad range of 3rd party hard hats. In both instances the face shield stows above the hard hat when not in use in a perfectly weight-balanced position.

When using the Universal version always ensure your helmet is CE marked with 440V, 1000V and "double triangle" symbol.

- 12 cal/cm<sup>2</sup> ATPV (ASTM F2178)
- GS-ET-29, Class 2
- EN166

Part No.	Description
CLY 540 AS12U-CE	Universal Arc Flash Visor with Clear Chin Cup
CLY 540 AS12-CE	Integral Arc Flash Visor and Helmet with Orange Chin Cup

## Arc Flash Balaclava

Clydesdale's Arc Flash balaclava is manufactured from Westex Indura Ultra Soft® rib-knit fabric providing breathable comfort and an excellent protection level of 12.1cal/cm<sup>2</sup>.

This product is designed for use with the CLY 540 AS12U-CE hard hat and visor to provide additional protection for the neck, face and back of the head. A suitably ATPV rated full face visor should always be used with this product to provide sufficient face protection.

Part No.	Description
CLY 545 5511 RB	Arc Protection Hood with Ear Protection
CLY 545 5611 RB	Arc Flash - Hard Hat Visor with Apron
CLY 581 121	Arc Flash Balaclava
CLY 421 011	Carry bag for AS12-CE Helmet and Face Shield
CLY 541 AS12-00	AS12-CE Flash Light Kit and Clip

14 cal/cm<sup>2</sup> version



CLY 545 5611 RB



CLY 540 AS12U-CE



CLY 540 AS12-CE



CLY 581 121



CLY 541 AS12-00





# CLYDESDALE

## Powering the Future



CLY 552 1410



CLY 560 1409



CLY 557 D2-LYBEC

### Clydesdale Insulating Gloves

Clydesdale insulating gloves are available in sizes 8-11. Proper fit is important to minimise chafing and fatigue. To determine glove size, measure the circumference around the palm (in inches). Allow for additional room if fabric glove liners are to be worn, especially with thermal liners.

Available in a variety of colours, material types and voltage classes Clydesdale Insulating Gloves are extremely flexible and make working with small parts easy. All Clydesdale Insulating Gloves meet or exceed EN 60903 and ASTM D120 standards

Part Number	Voltage Class	Arc Testing cal/cm <sup>2</sup>	Length	Material Type	Colour
CLY 550 11**	0 (1000V working)	38.4	11"	I – Natural Rubber	Black
CLY 560 14**	0 (1000V working)	5	14"	I – Latex	Orange
CLY 561 14**	1 (7500V working)	50	14"	I – Latex	Black
CLY 552 14**	2 (17000V working)	93.4*	14"	I – Natural Rubber	Black

\* Gloves found to ignite at this level before wearer suffered a measureable burn

\*\* Insert suffix for sizing, 08 for size 8, 10 for size 10 etc.

**Note:** 2 colour gloves are given as outside colour / inside colour

### Rubber Insulating Sleeves

Rubber Insulating Sleeves extend the coverage of the arm from the cuff of Rubber Insulating Gloves to the shoulder, fully protecting these areas from accidental contact with energised conductors and equipment. The sleeves feature a reinforcing fold at the cuff. This fold is preferred over a rolled bead because it adds less bulk to the cuff and fits into the glove easier without pushing. All Clydesdale Sleeves meet the requirements of IEC / EN 60984 as well as ASTM D1051.

Clydesdale Sleeves are manufactured using the same techniques as Cement Dipped Rubber Gloves. Porcelain forms are dipped into liquid rubber, dried, trimmed, marked and cured. Every sleeve receives the same quality inspections and electrical testing.

Other colour, class and styles of sleeve are available upon request.

Part No.	Voltage	Class	Size	Colour	Cuff Opening	Shoulder Opening
CLY 557 D2-RYBEC	2 (17,000V Working)		Regular	Yellow / Black	140-150mm	670-680mm
CLY 557 D2-LYBEC	2 (17,000V Working)		Large	Yellow / Black	170-180mm	700-710mm
CLY 557 D2XLYBEC	2 (17,000V Working)		X.Large	Yellow / Black	175-185mm	745-785mm

## Clydesdale Leather Protector Gloves

Leather protector gloves should always be worn over insulating gloves to provide necessary mechanical protection against cuts, abrasions and punctures. Clydesdale leather protector gloves are manufactured from cowhide or goatskin. Goatskin is softer and therefore more flexible whilst cowhide is stronger and more economically priced.

As laid down within the specifications of the ASTM standards, it is essential to ensure the correct distance between the top of the protector glove cuff and the top end of the bead of the insulating glove. The clearance table below details the applicable gap per class of insulating glove.

Glove Class	Minimum Distance
0	1/2" / 13mm
1	1" / 26mm
2	2" / 51mm
3	3" / 76mm
4	4" / 102mm

**Warning:** Never use leather protector gloves on their own for protection against electric shock as serious injury or death will result. Always use the correctly specified insulating gloves.

Part No.	Glove Class	Material	Length	Description
CLY 555 ILPG10 **	0, 1	Goatskin	10"	Elasticated cuff
CLY 555 ILP3S **	0, 1, 2, 3, 4	Cowhide	12"	Leather cuff palm-side, vinyl reverse

## Glove and Sleeve bags

Part No.	Glove Length in. (mm)	Dimensions in. (mm)	Weight kgs (lbs.)
CLY 420 GB-112	11 (280)	9" x 14" (229 x 356)	0.5 (1)
CLY 420 GB-114P*	14 (356)	9" x 16" (229 x 406)	0.5 (1)
CLY 420 GB-116P*	16 (406)	9" x 18" (229 x 457)	0.6 (1.2)
CLY 420 GB-118P*	18 (457)	9" x 20" (229 x 508)	0.7 (1.5)
CLY 420 2449-TUC**	17 (432)	12" x 29" (304 x 737)	1.2 (2.6)

\*NEW Glove and Protector Bags feature two layered pockets in one bag, allowing insulating gloves and protectors to be stored together.

\*\*New Combined glove and sleeve bag

## Glove Inflator

Glove inspection in the field is simplified by using a G-99 portable glove inflator

Part No.	Description	Weight kgs (lbs.)
CLY 559 G-99	Glove Inflator Kit	0.91 (2)



CLY 555 ILP3S



CLY 555 ILPG10



CLY 420 GB-114P



CLY 559 G-99

CLY 301 TP12-90



CLY 301 TP12B

CLY 558 M24-2



CLY 217 xxx

### Insulated Rescue Hook

Clydesdale's Insulated Rescue Hook is an invaluable tool for any workplace used to withdraw an injured worker from a hazardous area. Confined spaces, in vaults or just near electrical cabinets and switchgear are some of the places where this tool is a must. Featuring a foam-filled, fibreglass reinforced handle (rated at 69 kV per foot) for superior electrical insulation and a coated heat-treated body hook with an 18" opening. Other lengths are available as a special order. Contact us with your requirements.

Part No.	Length m (ft.)	Weight kgs (lbs.)
CLY 301 TP12-45	1.4 (5)	1.4 (3)
CLY 301 TP12-90	1.9 (6.5)	2.3 (5)

### Stick Mounting Brackets

Used to ensure that the Rescue Hook or Static Discharge Stick are where they are required at the time of an incident and also to protect them from being damaged whilst in storage, these brackets simply screw into a wall and the stick is mounted into the bracket.

Part No.	Description
CLY 301 TP12B	Stick Mounting Bracket (Pair)

### Switchboard Matting

Switchboard Matting is permanently placed in front of switchgear, motor control centres and other high voltage apparatus to provide personal protection for workers. Made from high quality rubber, 6.4mm (1/4") thick and tested to 20kV to comply with ASTM D178, Class 2 specifications. The corrugated surface acts as a safety tread while reducing the possibility of metal particles becoming embedded. Switchboard matting is supplied in 23 metre rolls.

Maximum Use: 17000V

Part No.	Dimensions mm (in.)	Weight kgs (lbs.) per yd.
CLY 558 M24-2	6 x 610 (1/4 x 24)	4.1 (9)
CLY 558 M30-2	6 x 762 (1/4 x 30)	5.4 (12)
CLY 558 M36-2	6 x 914 (1/4 x 36)	6.8 (15)
CLY 558 M48-2	6 x 1219 (1/4 x 48)	8.2 (18)

### Remote Operating Device (ROD) kit

Mitigates the risks associated with switchgear operation by allowing the user to operate switch remotely. Brand-specific, custom and universal variants available.

Part No.	Description	Contents
CLY 217 xxx	ROD Kit	Specific to customer



## WATER-JEL® Burn Care Products

WATER-JEL® is a thick, water-based gel made of 96% water that cools & soothes burn injuries and protects from airborne contamination. WATER-JEL® safely cools the skin without cooling the patient by allowing latent heat to escape from the burn site through the dressing. For thermal burns of all types and sizes. Products have a 5 year shelf life.

### DID YOU KNOW?

- An average of 7,600 electrical contact injuries occur annually in Europe
- One person is electrocuted in the workplace every day
- Electrocutions and ARC THERMAL BURNS resulting from Electric Arc Flashes are the 4th leading cause of traumatic occupational fatalities

Respond to burn injuries when and where they happen with WATER-JEL® Fire Blankets and Burn Dressings. WATER-JEL® blankets and dressings are soaked in a thick, water-based gel to stop the burning process, cool the burn and relieve pain. The gel is made from 96% water, won't dry out or stick to burn injuries and can be used on all types of thermal burns.

## WATER-JEL® Emergency Burn Station

The new WATER-JEL® EBS offers increased product visibility and awareness. Provides immediate location of the correct sized dressing. All products are fast to reach and easy to use. No special training is required and dressings can be applied immediately, directly on to the burn site and left in situ until medical help arrives.

Pack contents: 1 pce WJ Face Mask, 2 pcs WJ Dressing 10 x 40 cm, 2 pcs WJ Dressing 10 x 10 cm, 1 pce WJ Burn Jel EU 60ml, 1 pck WJ Burn Jel EU 5 x 3.5 g, 2 pcs WJ Conforming Bandage, 1 pce WJ First Aid Scissor. Provided with optional see-through door!

Part No.	Description
CLY 590 1110	Burn Station Kit – Wall Mounted w/ Door

## WATER-JEL® Industry Burn Kit - Soft Case

The WATER-JEL® Industry Burn Kit provides efficient first aid for thermal burns at every location you may need it. Easy to store and transport. Ideal for construction sites or service vehicles. All products are fast to reach and easy to use. No special training is required.

Pack contents: 1 pce WJ Face Mask, 2 pcs WJ Dressing 10 x 40 cm, 2 pcs WJ Dressing 10 x 10 cm, 2 pcs WJ Dressing 5 x 15 cm, 2 pcs WJ Conforming Bandage, 1 pce WJ First Aid Scissor.

Part No.	Description
CLY 590 2010	Burn Kit – Individual – Soft Case

## WATER-JEL® Industry Burn Kit - Hard Case

The WATER-JEL® Industry Burn Kit is also available with contents as above, however the kit is housed in a hard plastic case.

Part No.	Description
CLY 590 2020	Burn Kit – Individual – Hard Case



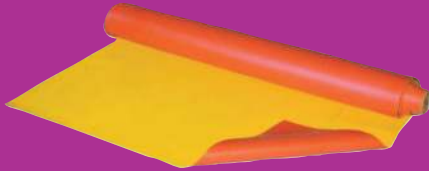
CLY 590 1110



CLY 590 2010

CLY 590 2020





CLY 971 R1330

CLY 971 R1330PVC



CLY 973 4860

### Roll Blankets

Clydesdale has gone to great lengths to protect workers from low voltage electrical hazards by now offering insulating blanket material on a roll. Clydesdale's insulating Roll Blankets, made from a high strength, fabric-reinforced Type II rubber, allow workers to custom-cut blankets to fit each application at the job site. This minimises the number of different low voltage blanket sizes and shapes that would otherwise need to be carried from job to job.

All classes of Roll Blankets are easily cut with scissors, and are flexible to -40°C. Highly puncture and tear resistant, each class of blanket is also flame (self-extinguishing), oil and ozone resistant. Each comes in a convenient 36" wide roll, 30 feet in length in unique colours making it easy to identify and highly visible in the work area.

### Clear PVC Roll Blankets

Clydesdale's Roll Blanket line includes a Class 1 (7500V) clear PVC material that permits complete visibility, yet provides the necessary insulating properties, meeting ASTM F1742 standards.

Part No.	Description	Max. Use	Dimensions ft. (m)
CLY 971 R0330	Class 0 Yellow	1000 V ac	3' x 30' (0.9 x 9)
CLY 971 R1330	Class 1 Yellow / Orange	7500 V ac	3' x 30' (0.9 x 9)
CLY 971 R1330PVC	Class 1 Clear PVC	7500 V ac	3' x 30' (0.9 x 9)

### Arc Suppression Blanket

The Arc Suppression Blanket is used as a barrier for protection from the explosive and incendiary effects of electrical arcs and flashes. These hazardous electrical discharges can be caused by faults in cables, cable splices joints and at transformer terminals, or they may be generated by the operation of switchgear, circuit breakers and lightning arrestors. The blanket can be used for worker protection in underground vaults, switchyards and other locations where electrical equipment poses a risk of exposure to explosive electrical discharges. Meets ASTM F2676

**Caution:** Because of the unpredictability of electrical discharges, the Arc Suppression Blanket may not totally contain arcs and flashes, but only reduce or limit explosive and incendiary effects. In such cases injuries may still occur, even when the blanket is properly used. These blankets are not electrically insulating.

Part No.	Dimension in. (mm)	Description
CLY 973 4860C	48 x 60 (1219 x 1524)	40kA. With Storage bag and tie straps
CLY 973 4896C	48 x 96 (1219 x 2438)	40kA. With Storage bag and tie straps
CLY 973 4860	48 x 60 (1219 x 1524)	40kA. Blanket only
CLY 973 4896	48 x 96 (1219 x 2438)	40kA. Blanket only
CLY 973 4896-15	48 x 96 (1219 x 2438)	15kA. Blanket only

## Blanket Pegs

Blanket Pegs can be effectively used to hold insulating blankets in place. Blanket pegs are made of fibreglass reinforced nylon and have moulded rubber boots to increase slip resistance.

Part No.	Length in. (mm)	Jaw Opening in. (mm)
CLY 559 21	9.5 (241)	5 (127)



CLY 559 21

## Non Conductive Tape Measure

There are no metal parts within this tape measure. It is not insulated but non-conductive, a huge technical difference, and as such the tape will not hold a current and can therefore be used in all sorts of circumstances. The tape itself is made from the highest quality FRP material, that will not stretch or tear, enabling the tape to last for several years of steady use. Proof tested to 20kV this tape is proving to be an invaluable aid in the utilities industry the world over.

Part No.	Description
CLY 111 001	Non Conductive Tape Measure - 3m



CLY 111 001

## Insulated Tools

Clydesdale is one of the leading suppliers of Insulated Hand Tools in the UK. All tools supplied are designed, manufactured and tested to comply with EN 60900. The range of tools available is extensive, far greater than pages of this Arc Flash Catalogue allow for. For further details please contact Clydesdale or visit our website [www.clydesdale.net](http://www.clydesdale.net)



## Hi-Vis Waistcoats

Clydesdale can supply standard or 3/4 sleeve length knitted polyester hi-vis waistcoats with Velcro front closure and VizLite retro reflective material. Waistcoats are available as 75cm length in sizes S to 4XL. CE marked to EN 533 Index 1.

Part No.	Description
CLY 521 7352	Hi-Vis FR 3/4 Sleeve Waistcoat
CLY 521 6842	Hi-Vis FR Waistcoat



CLY 521 7352

CLY 521 6842



# CLYDESDALE

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Underground Cable Installation

Overhead Line Construction

Insulated Tools

Arc Flash

Live Line Equipment & Accessories

Overhead Line Hardware

Cable Preparation



Other product brochures are available  
please call for more information:

Date of Preparation: March 2014

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