

CLYDESDALE

Powering the Future

CE EN 470-1
EN 531
ENV 50354

Arc Flash Protection & Associated PPE





IMPORTANT SAFETY INFORMATION

Arc Protection Clothing Requirements

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

- OSHA CFR 1910.269 'The employer shall ensure that each employee who is exposed to the hazards of flames or electric arcs does not wear clothing that, when exposed to flames or electric arcs, could increase the extent of injury that would be sustained by the employee.' (l)(6)(iii)
- Clothing made from acetate, nylon, polyester and rayon either pure or blended should not be worn when working in hazardous environments. Clothing made from 100% cotton or wool must be determined acceptable for the conditions the worker will be exposed to. Clothing made from flame-resistant materials, that meet current ASTM F1506, is acceptable.
- ASTM F1506 details the specifications of a textile to be used by an electrical worker as a means of electrical arc protection. A garment must include a label, which states the following information: Tracking I.D. Code, Meets ASTM F1506, Manufacturer's name, Care Instructions & Fibre Content, Size and 'Arc Rating' – ATPV or EBT.
- EN 470-1 is the European standard detailing minimum design and fabric requirements for protective clothing worn in welding and allied processes. Relevant as welding risks - molten metal splash, flame and UV are also found in electrical arcs.
- EN 531 European standard detailing minimum requirements of clothing used to protect against industrial heat and flames. Includes general design requirements and five performance requirements each of which are standards themselves and given code letters:

A:	Limited flame spread	EN 532
B:	Convective Heat	EN 367
C:	Radiant Heat	EN 366
D:	Molten aluminium splash	EN 373
E:	Molten iron splash	EN373

Clothing complying with EN 531 must meet code A and level 1 or above of at least one of the other performance requirements (B-E).

- ENV 50354 Also referred to as DD ENV 50354:2001, a European draft standard entitled Electrical arc test method for material and garments, for use by workers at risk from exposure to an electrical arc. It stipulates testing procedure and pass requirements for testing either a garment or piece of fabric to either a class 1 or higher energy class 2 test. Test parameters are as follows: voltage = 400V, arc duration = 500ms, ac frequency = 50 Hz, phase = single, electrode gap = 3cm, distance to receiving surface = 30cm.

NFPA 70E 2004 Edition

Table 3-3.9.3 Protective Clothing Characteristics – Typical Protective Clothing Systems

Hazardous Risk Category	Clothing Description (Number of clothing layers given in brackets)	Total Weight oz./yd ²	Minimum ATPV* or EBT* Rating of PPE cal/cm ²
0	Untreated cotton (1)	4.5-7	–
1	FR shirt & FR Trousers (1)	4.5-8	4
2	Cotton underwear plus FR shirt and FR trousers (2)	9-12	8
3	Cotton underwear plus FR shirt & FR trousers plus FR coverall (3)	16-20	25
4	Cotton underwear plus FR shirt & FR trousers plus double layer switching jacket and trousers (4)	24-30	40

*ATPV (Arc Thermal Performance Exposure Value) is defined in the ASTM F1959 standard arc test method for flame resistant (FR) fabrics as the incident energy that would just cause the onset of a second degree burn. E_{BT} (Breakopen Threshold Energy) is the average of the five highest incident energy exposure values below the Stoll curve where the fabric does not exhibit breakopen. E_{BT} is reported when ATPV cannot be measured due to FR fabric breakopen.

Fault current is either 4kA for a class 1 test, or 7kA for a class 2 test.

The electrodes are enclosed in a plaster box with one side open to direct the arc imitating a real life situation. This box test method is proposed to become IEC 61482-1-2. There is no documentation stating any equivalents between these classes and a cal/cm² rating.

Always Perform a Hazard Assessment

The NFPA 70E Standard for Electrical Safety Requirements for Employee Workplaces requires employers to perform an Electrical Arc Hazard Assessment. Each situation is unique and needs to be evaluated on its own merits. ASTM F1959 details the standardised test that must be used to determine the thermal protective value of textiles in an electric arc application.

Clothing selected for a particular application shall have an arc protective rating of (EBT or APTV) higher than the potential hazard to prevent the onset of 2nd degree burns. Above right are factors affecting potential energy exposures based on the Duke Heat Flux Calculator on our site (www.clydesdale.ltd.uk/calculator) to compute potential thermal exposure.

Factors Affecting the Extent & Seriousness of Worker Injury when Exposed to Arc Flash

1. Electric arc intensity
 - Fault current
 - System voltage
 - Electrode gap
 - Number of phases involved
 - Open arc configuration or enclosure
2. Electric arc duration
3. Distance of the worker from the electric arc
4. Type and fit of clothing worn
5. Age and health factors



Clydesdale FR Fabrics

- 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.
- NOMEX® is a man made fibre resistant to heat, flame and chemicals. NOMEX® and KEVLAR® are registered trademarks of E.I. du Pont de Nemours and Company.

Effects of Electrical Shock

Even relatively low voltages can be fatal. For example, electrical shocks produced from common 50 Hz ac power passing from hand to foot for a duration of one second can have the following effects:

Current	Effects
1-3 Milliamps	Tingling Sensation
3+ Milliamps	Shock (pain)
10+ Milliamps	Muscular Contractions (can't let go)
30+ Milliamps	Respiratory Paralysis (may be fatal)
60+ Milliamps	Ventricular Fibrillation (usually fatal)
4+ Amps	Heart Paralysis (fatal)
5+ Amps	Tissue Burning (fatal, vital organs destroyed)

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.

ISO 9000:2000...

This represents our commitment to quality, not only through our products but also in the service and internal workings of the company.



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CLY 574 020



CLY 574 075



CLY 574 031

Dual stage front closure with plastic zip and FR Velcro storm flap on 31-100 cal/cm² jacket designs.



CLY 530 T565BC



CLY 421 010

Clydesdale PRO-WEAR™ Flash Jackets

Dual stage front closure with plastic zip and FR Velcro storm flap on 31-100 cal/cm² jacket designs.

- 8 cal/cm² to 100 cal/cm² protection
- Indura Ultra Soft® material – Excellent breathability & cotton comfort
- All Clydesdale PRO-WEAR™ sewn with Nomex® thread & features Nomex® wristlets
- 32" long and available in sizes S, M, L, XL, 2XL and 3XL
- Expansion back for added comfort
- Other sizes available by special order
- Jackets designed to interface with PRO-HOOD™

Part No.	Description
CLY 574 008	8 cal/cm ² , navy blue, Indura Ultra Soft®
CLY 574 011	11 cal/cm ² , navy blue, Indura Ultra Soft®
CLY 574 020	20 cal/cm ² , navy blue, Indura Ultra Soft®
CLY 574 031	31 cal/cm ² , royal blue, Indura Ultra Soft®
CLY 574 040	40 cal/cm ² , grey, Indura Ultra Soft®
CLY 574 055	55 cal/cm ² , grey, Indura Ultra Soft®
CLY 574 075	75 cal/cm ² , grey, Indura Ultra Soft®
CLY 574 100	100 cal/cm ² , grey, Tuff Weld

Note: Add suffix for desired size, S, M, L, XL, 2XL, 3XL
Warning: Arc Flash Clothing protects from thermal effects of arc flash only.

Safety Glasses

- CE marked, meets current EN166 standard only
- Anti-fog, anti-scratch, anti-static
- 99.9% UV protection
- Glasses are not tested to above standards

Part No.	Description
CLY 530 T565BC	Clear lens, black frame
CLY 530 T565BS	Smoked lens, black frame
CLY 530 T565BA	Amber lens, black frame

Kit Bag

Part No.	Description
CLY 421 010	Large Kit bag for storing Clydesdale PRO-WEAR™ Arc Flash Clothing, gloves and other accessories

Clydesdale PRO-WEAR™ Arc Flash Protection Bib Overalls

- 11 cal/cm² to 100 cal/cm² protection
- Indura Ultra Soft® material – Excellent breathability & cotton comfort
- All Clydesdale PRO-WEAR™ sewn with Nomex® thread
- Bib front for added protection
- Integrated heavy duty braces
- Relaxed cut for greater mobility
- Adjustable Velcro waist straps
- Easy-on boot access
- Other sizes available by special order

Part No.	Description
CLY 573 011	11 cal/cm ² , navy blue, Indura Ultra Soft®
CLY 573 020	20 cal/cm ² , navy blue, Indura Ultra Soft®
CLY 573 031	31 cal/cm ² , royal blue, Indura Ultra Soft®
CLY 573 040	40 cal/cm ² , grey, Indura Ultra Soft®
CLY 573 055	55 cal/cm ² , grey, Indura Ultra Soft®
CLY 573 075	75 cal/cm ² , grey, Indura Ultra Soft®
CLY 573 100	100 cal/cm ² , grey, Tuff Weld

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

Clydesdale PRO-WEAR™ Arc Flash Protection Coveralls

- 8 cal/cm² to 20 cal/cm² protection
- Indura Ultra Soft® material - Excellent breathability & cotton comfort
- All Clydesdale PRO-WEAR™ sewn with Nomex® thread
- Full cut with set in sleeves
- Front flame retardant closure
- Other sizes available by special order

Part No.	Description
CLY 572 008	8 cal/cm ² , navy blue, Indura Ultra Soft®
CLY 572 011	11 cal/cm ² , navy blue, Indura Ultra Soft®
CLY 572 020	20 cal/cm ² , navy blue, Indura Ultra Soft®)

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



CLY 573 011



CLY 573 031



CLY 573 040



CLY 572 011

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to the following
standards:
EN 470-1
EN 531
ENV 50354

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CLY 571 020



CLY 571 040



CLY 571 031



CLY 571 900



Clydesdale PRO-HOOD™ Arc Flash Protection Hood

- 11 cal/cm² to 100 cal/cm² protection
- Indura Ultra Soft® material – Excellent breathability & cotton comfort
- All Clydesdale PRO-HOOD™ sewn with Nomex® thread
- 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 SA29R03 opposite
- One size fits all

Part No.

Description

Part No.	Description
CLY 571 008	8cal/cm ² navy blue, Indura Ultra Soft®
CLY 571 011	11 cal/cm ² navy blue, Indura Ultra Soft®
CLY 571 020	20 cal/cm ² navy blue, Indura Ultra Soft®
CLY 571 031	31 cal/cm ² royal blue, Indura Ultra Soft®
CLY 571 040	40 cal/cm ² grey, Indura Ultra Soft®
CLY 571 055	55 cal/cm ² grey, Indura Ultra Soft®
CLY 571 075	75 cal/cm ² grey, Indura Ultra Soft®
CLY 571 100	100 cal/cm ² grey, Tuff Weld

"PRO-AIR" Hood Blower System

The PRO-AIR is a belt mounted compact powered air system that provides a continuous flow of filtered air to reduce worker fatigue and provide additional comfort when working in hot and humid conditions. The PRO-AIR integrates with the full range of Clydesdale PRO-HOOD and easily attaches inside the hood using the Velcro fastening system.

The PRO-AIR Kit consists of a blower unit, belt and comfort pad, rechargeable battery pack, breathing hose and battery charger. The blower unit and breathing hose are shrouded in an FR material to comply with NFPA-70E. The PRO-AIR kit is supplied in its own durable carry case.

Part No.

Description

Part No.	Description
CLY 571 900	Pro-Air Kit
CLY 571 901	Blower Unit, Battery, Belt, Back Support, FR Mesh Bag
CLY 571 902	Battery Pack
CLY 571 903	Replacement air-filter cartridges
CLY 571 904	O-Ring for air filter
CLY 571 905	Y-Shaped Breathing Hose
CLY 571 906	FR shroud for breathing hose
CLY 571 907	Battery Charger
CLY 571 908	Durable Carry Case

Replacement Arc Flash Protection Lenses, Brackets and Helmets

- 8 cal/cm² to 100 cal/cm² protection
- 1.5mm thickness
- 10" x 20" (254 x 508mm) viewing area on replacement PRO-HOOD™ shield

Part No.	Description
CLY 540 SA29R03	ANSI Type I, front brim with ratchet 4-point suspension
CLY 571 LENS	Replacement lens with velcro attachment for 8 cal/cm ² to 11 cal/cm ² Clydesdale PRO-HOOD™
CLY 571 040 LENS	Replacement amber lens with Velcro attachment for 20 cal/cm ² to 40 cal/cm ² Clydesdale PRO-HOOD™
CLY 571 075 LENS	Replacement lens with velcro attachment for 55 cal/cm ² to 75 cal/cm ² Clydesdale PRO-HOOD™
CLY 571 100 LENS	Replacement lens for 100 cal/cm ² and higher Clydesdale PRO-HOOD™
CLY 571 001	Dielectric hard hat bracket to interface with slotted front brim hard hats

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 Class 2 under EN 50354 for arc flash protection.

Hard Hat Visor with Apron

The unique elastic band design allows the Visor to be installed on 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 explosion. The apron is designed and proven to deflect the energy of the arc away from the wearers face. With other arc protecting 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.

1000V Hard Hat

Clydesdale is proud to launch the first 1000V hard hat. This hard hat incorporates all of the usual safety features associated with a high quality model but is also electrically safe as well having met the stringent tests of the German VDE standards body. Available in many colours the standard unit is Red, for alternative colours please amend the suffix as follows – Y for Yellow, B for Blue, W for White.

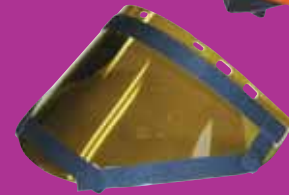
Hard Hat with 10 cal/cm² Fixed Face Visor

Part of the PRO-Shield range, the AS1000HT is a fully integrated hard hat and visor in one, ideal for permanent storage at points of switching etc. Ensure the integrated chin cup is used to provide an ATPV rating of 10 cal/cm².

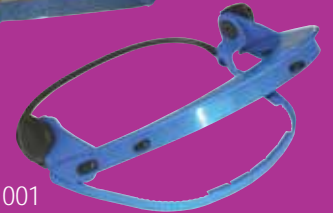
Part No.	Description
CLY 545 5501 RB	Arc Protection Hood with Ear Protection
CLY 545 5601 RB	Arc Flash – Hard Hat Visor with Apron
CLY 540 LVR	Hard Hat - 1000V Rated - Red
CLY 540 AS1000HT	Hard Hat with 10 cal/cm ² Fixed Face Visor



CLY 540 SA29R03



CLY 571 100 LENS



CLY 571 001



CLY 545 5501 RB



CLY 545 5601 RB



CLY 540 LVR



CLY 540 AS1000HT

These two products now  to the following standards:
EN 166 / EN 50354
Class 2



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CLY 575 011 0093



Arc Flash Protection Kits

Kits with Coveralls

Part No.	cal/cm ² Rating	Glove Class	Glove Size	Garment Size
CLY 575	008	0	08, 09, 10 or 11	S = 1, M = 2, L = 3, XL = 4, 2XL = 5 or 3XL = 6
CLY 575	011	0		
CLY 575	011	2		
CLY 575	020	0		
CLY 575	020	2		

Example

CLY 575	011	0	09	3
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CLY 575 011 0093 is an arc flash protection kit with a rating of 11 cal/cm² containing Black 11" Rubber Insulating Gloves Class 0 size 9, Leather Protector Gloves 10" size 9, Orange Hard Hat SA29R03, 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.

Kits with Bib Overalls & Jackets

Part No.	cal/cm ² Rating	Glove Class	Glove Size	Garment Size
CLY 576	011	0	08, 09, 10 or 11	S = 1, M = 2, L = 3, XL = 4, 2XL = 5 or 3XL = 6
CLY 576	020	0		
CLY 576	020	2		
CLY 576	031	0		
CLY 576	031	2		
CLY 576	040	2		
CLY 576	055	2		
CLY 576	075	2		
CLY 576	100	2		

Example

CLY 576	040	2	09	4
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CLY 576 040 2094 is an arc flash protection kit with a rating of 40 cal/cm² containing Black 14" Rubber Insulating Gloves Class 2 size 9, Leather Protector Gloves 12" size 9, Orange Hard Hat SA29R03, 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

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



CLY 576 020 0103



CLY 576 100 2104

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 ft. (m)	Weight lbs. (kgs)
CLY 301 TP12-90	6.5 (1.9)	5 (2.3)

Static Discharge Stick

The Static Discharge Stick is designed to safely remove the static charge after de-energizing. This grounding tool is pre-assembled and includes a brass alloy 'U' hook, 4 foot closed cell foam filled tubular fibreglass switch stick made in accordance with ASTM Standard F711. Six feet of copper grounding cable attached to a Clydesdale 1814 flat jaw grade 3 bronze serrated clamp with strain relief.

Part No.	Cable Length ft. (m)	Description	Weight lbs. (kgs)
CLY 250 20817	6 (1.8)	Static Discharge Stick 4' (1.2m) length	8 (3.6)

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, 1/4" (6.4mm) 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 25 yard rolls.

Maximum Use: 17000V

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

CLY 301 TP12-90



CLY 301 TP12B



CLY 250 20817

CLY 558 M24-2



Matting cross section

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to the following
standard:
EN 60903

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CLY 560 1410



CLY 552 1410



CLY 550 1409

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	Length	Material Type	Colour
CLY 5600 11**	00 (500V working)	11"	I – Latex	Orange
CLY 550 11**	0 (1000V working)	11"	I – Natural Rubber	Black
CLY 550 14**	0 (1000V working)	14"	I – Natural Rubber	Red / Yellow
CLY 560 14**	0 (1000V working)	14"	I – Latex	Orange
CLY 570 16**	0 (1000V working)	16"	II – EPDM	Blue
CLY 570 16**BO	0 (1000V working)	16"	II – EPDM	Blue / Orange
CLY 551 14**	1 (7500V working)	14"	I – Natural Rubber	Black
CLY 551 16**	1 (7500V working)	16"	I – Natural Rubber	Black / Red
CLY 561 16**	1 (7500V working)	16"	I – Latex	Orange
CLY 552 14**	2 (17500V working)	14"	I – Natural Rubber	Black
CLY 552 16**	2 (17500V working)	16"	I – Natural Rubber	Yellow / Black
CLY 553 16**	3 (26000V working)	16"	I – Natural Rubber	Yellow / Black
CLY 553 18**	3 (26000V working)	18"	I – Natural Rubber	Yellow / Black
CLY 554 18**	4 (36000V working)	18"	I – Natural Rubber	Yellow / Black

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

Note: Two Colour gloves, inside colour is first, i.e. Red / Yellow denotes a glove with an inner colour of red and an outer colour of yellow.

Other configurations of class, length and material type are available. Please enquire for further details.

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 EN and 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 opposite details the applicable gap per class of insulating glove.

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.

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Part No.	Glove Class	Material	Length	Description
CLY 555 07451 **	00, 0 , 1	Goatskin	13"	Buckle tie and high visibility cuff
CLY 555 156-4-**	0, 1, 2, 3, 4	Cowhide	12"	4" Salcor Rubber Cuff
CLY 555 156-6-**	0, 1, 2, 3, 4	Cowhide	14"	6" Salcor Rubber Cuff
CLY 555 ILPG10 **	00, 0, 1	Goatskin	10"	Elasticated cuff
CLY 555 ILP3S **	0, 1, 2, 3, 4	Cowhide	12"	Leather cuff palm-side, vinyl reverse

Glove Class	Distance
00	1/2" / 13mm
0	1/2" / 13mm
1	1" / 26mm
2	2" / 51mm
3	3" / 76mm
4	4" / 102mm

Glove Bags

Part No.	Glove Length in. (mm)	Dimensions in. (mm)	Weight lbs. (kgs)
CLY 420 GB112	11 (280)	9" x 14" (229 x 356)	1 (.5)
CLY 420 GB114	14 (356)	9" x 16" (229 x 406)	1 (.5)
CLY 420 GB116	16 (406)	9" x 18" (229 x 457)	1.2 (.6)
CLY 420 GB118	18 (457)	9" x 20" (229 x 508)	1.5 (.7)

Glove Inflator

Electrical insulating gloves must be inspected before each use. Inspection is simplified by using a portable glove inflator such as the G-99. The G-99 is a simple, easy to use, portable glove inflator. The G-99 provides a quality means of inspecting gloves in the field. The glove is secured to the inflator using a nylon strap, fastened with Velcro, or a rubber 'O' ring. Inflation is accomplished by pumping the bellows of the inflator.

Part No.	Description	Weight lbs (kgs)
CLY 559 G-99	Glove Inflator Kit	2 (.91)
CLY 559 G-99 01	Replacement Bag	-
CLY 559 G-99 02	Replacement 'O' Ring	-
CLY 559 G-99 03	Replacement Strap	-
CLY 559 G-99 04	Replacement Check Valve	-



CLY 555 ILPG10



CLY 550 1109

CLY 555 ILP1009

CLY 420 GB112



CLY 559 G-99



CLY 971 R1330

CLY 971 R1330PVC



CLY 973 4860



CLY 559 21

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' (.9 x 9)
CLY 971 R1330	Class 1 Yellow / Orange	7500 V ac	3' x 30' (.9 x 9)
CLY 971 R1330PVC	Class 1 Clear PVC	7500 V ac	3' x 30' (.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.

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.

Part No.	Dimension in. (mm)	Description
CLY 973 4860C	48 x 60 (1219 x 1524)	with Canister
CLY 973 4896C	48 x 96 (1219 x 2438)	with Canister
CLY 973 4860	48 x 60 (1219 x 1524)	Blanket Only
CLY 973 4896	48 x 96 (1219 x 2438)	Blanket Only

Blanket Pegs

Blanket Pegs can be effectively used to hold insulating blankets in place. Springs are used for tension while extra holes in the body of the peg are used to grip conductors and prevent line hose from sliding. Blanket pegs are made of fibreglass reinforced nylon and have moulded rubber boots to increase slip resistance.

Part No.	Description	Length in. (mm)	Jaw Opening in. (mm)	Weight lbs. (kgs)
CLY 559 21	Nylon Peg c/w boots	9.5 (241)	5 (127)	.25 (.11)

Electrical Arc Hazard Assessment Software

ARCPRO v.2 is a software program developed to calculate the thermal parameters of electrical arcs. The program is designed to aid in the selection of protective clothing by defining the arc hazard for workers who may be accidentally exposed to electrical arcs. The user can then specify clothing that will withstand the level of predicted arc hazards. In the USA, OSHA regulations have made it necessary for employers to ensure that clothing worn by workers exposed to electrical arcs must not contribute to the extent of an injury. OSHA requires utilities and industries to show compliance with such regulations if there is an accident.

Part No.	Description
CLY 590 0000	Arcpro V.2 Package

Non Conductive Tape Measure

There are no metal parts within this tape measure, as it is not insulated but non-conductive, this is a huge technical difference, the tape will not hold a current, therefore can 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

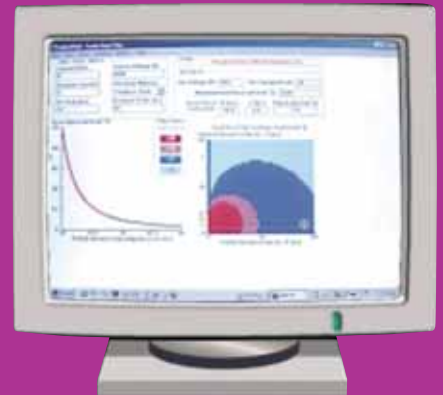
Voltage Detector for Switch Rooms

The TAG 200BC is used to check the absence of voltage on the capacitive test point of URD elbows on 10 kV to 30 kV systems. The main feature is its insulated electrode designed to open capacitive test point covers and to establish contact. The electrode includes a universal fitting (sunrise adapter) for fitting to an insulating stick to ensure safe working distances.

Part No.	Description
CLY 300 2-BC	TAG 200BC Voltage Detector

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.ltd.uk



Ignitable Clothing Window



CLY 111 001



CLY 300 2-BC



Now **CE** Marked
to the following
standards:
EN 470-1
EN 531
ENV 50354

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The NOAH Range

Due to customer demand Clydesdale has now developed a complete range of everyday workwear especially for workers who are in regular or occasional contact with electrical apparatus that could result in their exposure to a potential arc flash. Purposely designed to be comfortable, smart and easy to wear, the NOAH range of arc clothing is also produced from the field proven Westex Indura UltraSoft fabrics and therefore offers exceptional FR properties as well as its unrivalled Arc protection.

Coverall

- 8 cal/cm² to 21 cal/cm² protection
- Plastic Zip covered by Velcro front closure
- Elasticated back with pleats for added comfort
- Straight cut wrist and ankle cuffs
- Sizes S, M, L, XL or 2XL available *(for size S insert suffix 1, M suffix 2 etc) see chart on page 16
- Also available in Vinex material for Aluminium splash exposure
- Multiple options to meet exact requirements (please see table on page 14 & 15)

Part No	ATPV	Indura UltraSoft	Weight	NFPA 70e Haz Risk	EN 531	EN 470-1	ENV 50354
CLY 582 087*	8 cal/cm ²	301 Twill	250 g/m ²	Cat 2	A B1 C1	PASS	Class 1
CLY 582 124*	12 cal/cm ²	451 Twill	319 g/m ²	Cat 2	A B1 C1 E1	PASS	Class 1
CLY 582 210*	21 cal/cm ²	801 Sateen	477 g/m ²	Cat 2	A B2 C1 E3	PASS	Class 2
CLY 582 135*	13 cal/cm ²	851 Sateen	319 g/m ²	Cat 2	A B1 C1 E1	PASS	Class 1
CLY 582 081*	8 cal/cm ²	1200 Vinex	280 g/m ²	Cat 2	A B2 C1 D1 E1	PASS	Class 1
CLY 582 107*	10 cal/cm ²	1204 Vinex	390 g/m ²	Cat 2	B2 C1 D2 E3	PASS	Class 1



Trousers

- 8 cal/cm² to 21 cal/cm² protection
- Plastic Zip under extra wide flap with "Invisible" jeans fastening button
- Elasticated side waist with seven belt loops
- Straight ankle cuffs
- Sizes S, M, L, XL or 2XL available *(for size S insert suffix 1, M suffix 2 etc) see chart on page 16
- Also available in Vinex material for Aluminium splash exposure
- Multiple options to meet exact requirements (please see table on page 14 & 15)

Part No	ATPV	Indura UltraSoft	Weight	NFPA 70e Haz Risk	EN 531	EN 470-1	ENV 50354
CLY 583 087*	8 cal/cm ²	301 Twill	250 g/m ²	Cat 2	A B1 C1	PASS	Class 1
CLY 583 124*	12 cal/cm ²	451 Twill	319 g/m ²	Cat 2	A B1 C1 E1	PASS	Class 1
CLY 583 210*	21 cal/cm ²	801 Sateen	477 g/m ²	Cat 2	A B2 C1 E3	PASS	Class 2
CLY 583 135*	13 cal/cm ²	851 Sateen	319 g/m ²	Cat 2	A B1 C1 E1	PASS	Class 1
CLY 583 081*	8 cal/cm ²	1200 Vinex	280 g/m ²	Cat 2	A B2 C1 D1 E1	PASS	Class 1
CLY 583 107*	10 cal/cm ²	1204 Vinex	390 g/m ²	Cat 2	B2 C1 D2 E3	PASS	Class 1

Lab Coat

- 8 cal/cm² to 21 cal/cm² protection
- Main closure with plastic poppers up to neck
- Straight wrist cuffs
- Sizes S, M, L, XL or 2XL available *(for size S insert suffix 1, M suffix 2 etc) see chart on page 16
- Also available in Vinex material for Aluminium splash exposure
- Multiple options to meet exact requirements (please see table on page 14 & 15)



Part No	ATPV	Indura UltraSoft	Weight	NFPA 70e Haz Risk	EN 531	EN 470-1	ENV 50354
CLY 584 087*	8 cal/cm ²	301 Twill	250 g/m ²	Cat 2	A B1 C1	PASS	Class 1
CLY 584 124*	12 cal/cm ²	451 Twill	319 g/m ²	Cat 2	A B1 C1 E1	PASS	Class 1
CLY 584 210*	21 cal/cm ²	801 Sateen	477 g/m ²	Cat 2	A B2 C1 E3	PASS	Class 2
CLY 584 135*	13 cal/cm ²	851 Sateen	319 g/m ²	Cat 2	A B1 C1 E1	PASS	Class 1
CLY 584 081*	8 cal/cm ²	1200 Vinex	280 g/m ²	Cat 2	A B2 C1 D1 E1	PASS	Class 1
CLY 584 107*	10 cal/cm ²	1204 Vinex	390 g/m ²	Cat 2	B2 C1 D2 E3	PASS	Class 1

Jacket

- 8 cal/cm² to 21 cal/cm² protection
- Plastic Zip covered by Velcro front closure
- Elasticated back with pleats for added comfort
- Fastening cuffs with covered plastic poppers
- Sizes S, M, L, XL or 2XL available *(for size S insert suffix 1, M suffix 2 etc) see chart on page 16
- Also available in Vinex material for Aluminium splash exposure
- Multiple options to meet exact requirements (please see table on page 14 & 15)

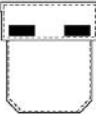


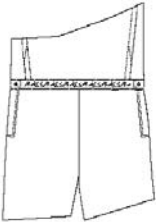
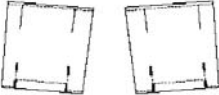
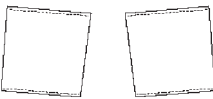
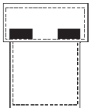

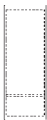


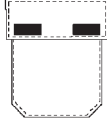
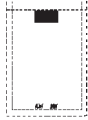
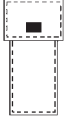



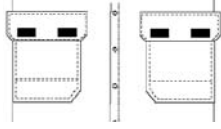

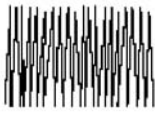
Part No	ATPV	Indura UltraSoft	Weight	NFPA 70e Haz Risk	EN 531	EN 470-1	ENV 50354
CLY 585 087*	8 cal/cm ²	301 Twill	250 g/m ²	Cat 2	A B1 C1	PASS	Class 1
CLY 585 124*	12 cal/cm ²	451 Twill	319 g/m ²	Cat 2	A B1 C1 E1	PASS	Class 1
CLY 585 210*	21 cal/cm ²	801 Sateen	477 g/m ²	Cat 2	A B2 C1 E3	PASS	Class 2
CLY 585 135*	13 cal/cm ²	851 Sateen	319 g/m ²	Cat 2	A B1 C1 E1	PASS	Class 1
CLY 585 081*	8 cal/cm ²	1200 Vinex	280 g/m ²	Cat 2	A B2 C1 D1 E1	PASS	Class 1
CLY 585 107*	10 cal/cm ²	1204 Vinex	390 g/m ²	Cat 2	B2 C1 D2 E3	PASS	Class 1

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

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Description	Coverall	Trousers	Labcoat	Jacket	Long Sleeve T-shirt	Long Sleeve Polo Shirt	Three Button Shirt	Long Sleeve Shirt
 <p>Left and/or right external rear pocket. Cover flap with velcro closure.</p>	✓	✓	-	-	-	-	-	-
 <p>Left and/or right internal rear pocket. Plastic flame-retardant zip closure.</p>	✓	✓	-	-	-	-	-	-
 <p>Left and right internal side pockets. Opening approximately 5° to side seam.</p>	✓	✓	-	-	-	-	-	-
 <p>Slit behind covered flap inside side pockets allowing access to undergarments.</p>	✓	-	-	-	-	-	-	-
 <p>Left and right leg kneepad pouch. Access via opening in bottom.</p>	✓	✓	-	-	-	-	-	-
 <p>Left and right extra layer over knee area. Sewn around leg circumference.</p>	✓	✓	-	-	-	-	-	-
 <p>Left and/or right external leg cargo pocket. Cover flap with velcro closure.</p>	✓	✓	-	-	-	-	-	-
 <p>Left and/or right external leg rule pocket. Cover flap with velcro closure.</p>	✓	✓	-	-	-	-	-	-
 <p>Left and/or right external leg rule pocket. No cover flap. Opening less than 75mm wide. Behind side seam.</p>	✓	✓	-	-	-	-	-	-

	Description	Overall	Trousers	Labcoat	Jacket	Long Sleeve T-shirt	Long Sleeve Polo Shirt	Three Button Shirt	Long Sleeve Shirt
	Left and/or right external breast pocket. Cover flap with velcro closure.	✓	-	✓	✓	-	-	✓	✓
	Left and/or right internal breast pocket. Velcro closure.	✓	-	✓	✓	-	-	-	-
	Left and/or right pen/mobile pocket on upper sleeve. Cover flap with velcro closer.	✓	-	✓	✓	-	-	-	-
	Left and right ankle zips. Flap covering fastened with velcro.	✓	-	-	-	-	-	-	-
	Left and right arm cuffs elasticised. Elastic material stitched inside cuff and completely surrounded by garment FR material.	✓	-	-	-	-	-	-	-
	Left and right leg cuffs elasticised. Elastic material stitched inside cuff and completely surrounded by garment FR material.	✓	-	-	-	-	-	-	-
	Left and/or right front pockets. Cover flap with velcro closure.	✓	-	✓	✓	-	-	-	-
	Left and/or right front angled 'belly' pockets. Cover flap with continuous velcro closure.	-	-	-	✓	-	-	-	-
	Elasticised waist on left and right sides.	-	-	-	✓	-	-	-	-

Now **CE** Marked
to the following
standards:
EN 531
ENV 50354

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Shirting Garments

- 6 cal/cm² to 10 cal/cm² protection
- Fastening cuffs / necks with covered plastic poppers where applicable
- Straight Cuffs on T and Polo Design
- Sizes S, M, L, XL or 2XL available *(for size S insert suffix 1, M suffix 2 etc)
- Multiple options to meet exact requirements (please see table on page 14 & 15)

Part No	ATPV	Indura UltraSoft	Weight	NFPA 70e Haz Risk	EN 531	ENV 50354
Long Sleeve T-Shirt						
CLY 586 109*	10 cal/cm ²	130 IL Knit	205 g/m ²	Cat 2	A B1 C1	Class 1
Long Sleeve Polo Shirt						
CLY 587 109*	10 cal/cm ²	130 IL Knit	205 g/m ²	Cat 2	A B1 C1	Class 1
3 Button Shirt						
<small>(As Long Sleeve Shirt except only 3 neck buttons)</small>						
CLY 588 060*	6 cal/cm ²	331 Chambray	207 g/m ²	Cat 1	A B1 C1	Class 1
CLY 588 061*	6 cal/cm ²	341 Twill	203 g/m ²	Cat 1	A B1 C1	Class 1
Long Sleeve Shirt						
CLY 589 060*	6 cal/cm ²	331 Chambray	207 g/m ²	Cat 1	A B1 C1	Class 1
CLY 589 061*	6 cal/cm ²	341 Twill	203 g/m ²	Cat 1	A B1 C1	Class 1

Size Chart

Size	Waist		Neck		Chest		Height	
	cm	Inch	cm	Inch	cm	Inch	cm	Inch
XS	76-84	30-33			88-96	35-38	164-170	5'5"-5'7"
S	80-88	31-35	36	14	92-100	36-39	170-176	5'7"-5'9"
M	84-92	33-36	38	15	96-104	38-41	176-182	5'9"-6'0"
L	88-96	35-38	40	15 ^{1/2}	100-108	39-43	176-182	5'9"-6'0"
XL	92-100	36-39	42	16 ^{1/2}	104-112	41-44	182-188	6'0"-6'2"
XXL	96-104	38-41	44	17 ^{1/2}	108-116	43-46	182-188	6'0"-6'2"
XXXL	100-108	39-43	46	18	112-120	44-47	188-194	6'2"-6'4"
XXXXL	104-112	41-44	-	-	116-124	46-49	188-194	6'2"-6'4"



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 onto 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 on 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 05 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 2010



CLY 590 1110



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