

# CLYDESDALE

## Powering the Future

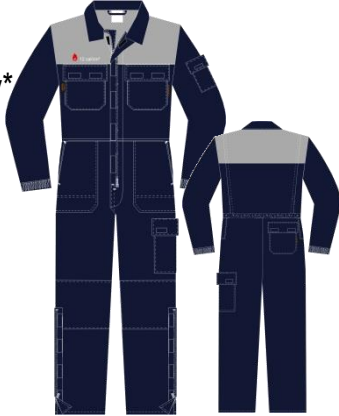
### User Instructions:

### Noah Arc Flash Garment

#### Clydesdale NOAH Arc Flash Protection Coveralls

Product No's:

CLY 582 124 xy\*



#### Clydesdale NOAH Arc Flash Protection Trousers

Product No's:

CLY 583 124 xxy\*



#### Clydesdale NOAH Arc Flash Protection Labcoat

Product No's:

CLY 584 124 x\*



#### Clydesdale NOAH Arc Flash Protection Jackets

Product No's:

CLY 585 124 x\*



#### Clydesdale NOAH Arc Flash Protection long Sleeve Polo Shirt

Product No's:

CLY 587 109 x\*



#### Clydesdale NOAH Arc Flash Protection Labcoat

Product No's:

CLY 584 392 x\*



*\*Size of garment is added to end of part number (see section 2).*

*Example of coverall sizing is CLY 582 124 4R*

*Example of Trousers sizing is CLY 583 124 34T*

*Example of Jacket sizing is CLY 585 124 5*

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This document outlines the safe use of Clydesdale NOAH Arc flash Protection Personal Protective Equipment and applies to the products listed on page 1 of this document. These products are henceforth referred to as 'the PPE' or 'the garment(s)' in this document. 'The User' shall be defined in this document as the wearer of the PPE. The PPE has been shown to conform with the European PPE Directive 89/686/EEC through compliance to the relevant standards and test methods EN ISO 11612:2008, IEC 61482-2:2009, EN 61482-1-1:2009, EN 61482-1-2:2007, as well as by satisfying all applicable Basic Health and Safety Requirements in Annex II of European PPE Directive according to Article 3 of that directive.

#### **CAREFULLY READ THESE INSTRUCTIONS BEFORE USING THIS PRODUCT**

##### **1. Intended Use of the PPE:**

**N.B: THE PPE IS PRIMARILY INTENDED TO PROTECT THE USER FROM THE THERMAL EFFECTS OF AN ELECTRIC ARC FLASH. IT HAS ALSO BEEN SHOWN TO OFFER PROTECTION FROM SEVERAL CATEGORIES OF HEAT TRANSFER, MOLTEN METAL (SEE SECTION 2) AND FLAME IGNITION ACCORDING TO EN ISO 11612:2008.**

The PPE is NOT intended to be used to provide protection against other risks such as electric shock, mechanical impact, mechanical vibration, physical injury (abrasion, perforation, cuts, bites) or harmful effects of noise.

**N.B: THE PPE MUST NOT COME IN TO CONTACT WITH LIVE EQUIPMENT! WHENEVER POSSIBLE, ALWAYS DE- ENERGISE CIRCUITS BEFORE WORKING ON OR AROUND THEM.**

The PPE is only intended to provide protection for the limbs and torso of the user. Neck, head, foot and hand protection must also be provided for using compatible PPE as described in section 4 of this document.

The PPE is available in a range of Arc Thermal Performance Value (ATPV) protection levels as shown in section 2 of this document. The ATPV of the PPE is the incident energy from an electrical arc on a fabric, garment or a multi-layered system that results in a 50% probability that sufficient heat transfer through the tested specimen is predicted to cause the onset of a second degree skin burn injury based on the Stoll curve, without the garment or material breaking open.

For each application where there is a risk of an electric arc occurrence, a suitable Arc Flash Hazard Analysis MUST ALWAYS be conducted by a competent person to ascertain the potential incident energy that the electric arc could emit. Each application is unique and can be defined by the following factors required to conduct an Arc Flash Hazard Analysis: Arc fault current, Supply voltage, Electrode gap, Number of phases of system, Electrical equipment environment (open air or enclosure), Arc duration, Distance of the PPE user to arc. Software for calculating the correct ATPV class can be obtained from <http://www.clydesdale.net/heatflux.asp>.

Once an Arc Flash Hazard Analysis has been conducted, the PPE of an appropriate ATPV class must be selected from the available range.

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**N.B: THE ATPV CLASS OF ALL OF THE PPE GARMENTS SELECTED FOR THE APPLICATION MUST BE HIGHER THAN THE POTENTIAL INCIDENT ENERGY FROM THE ELECTRIC ARC (ESTIMATED FROM AN ARC FLASH HAZARDS ANALYSIS) TO ELIMINATE THE RISK OF SECOND DEGREE BURNS, SHOULD AN ARC OCCUR.**

The PPE should always be worn correctly by the user when entering a hazardous area as follows: Where applicable, all zippers should be fully closed, ALL plastic poppers correctly fastened and all hook & pile flaps closed fully and flush with no hook or pile portions exposed. The PPE should not be worn in such a way that the wearer's undergarments or skin may be exposed – for example rolling up sleeves or leaving front poppers undone. The PPE should always fit the user correctly. If the PPE is either too loose or too tight, the PPE will not provide an optimum level of protection as the user's movement and sight may become impeded or the user's skin or undergarments may become exposed and unprotected. All of the PPE products are available in a range of sizes: S, M, L, XL, 2XL, 3XL to allow appropriate selection to ensure the PPE will fit the user correctly. For PPE with ankle zips, the zipper tab should be tucked up under the hook & loop fastened cover flap to conceal it.

**N.B: IN THE EVENT OF ACCIDENTAL SPLASH WITH FLAMMABLE OR OTHERWISE HAZARDOUS LIQUID CHEMICALS, LEAVE THE WORK AREA AND IMMEDIATELY REMOVE THE PPE, TAKING CARE NOT TO HAVE THE CHEMICALS COME IN TO CONTACT WITH THE SKIN.**

#### 2. Construction, selection, layering and sizing of PPE

PPE Protection Chart					
Fabric Properties		Fabric	INDURA Ultrasoft®		
		Fabric Style No.	130	451	451+451
		EN 61482-1-1, ATPV Rating (cal/cm <sup>2</sup> ), Open Arc	10.9	12.4	39.2
		EN 61482-1-2, Arc Class, Box Test (Class 1 = 4kA, Class 2 = 7kA)	Class 1*	Class 1*	Class 2**
		EN ISO 11612, Heat and Flame protection (A1, A2, B1, C1)	✓	✓	✓
		EN ISO 11612, Contact Heat Protection (F1)	✓		
Garment Fabric		Weight (g/m <sup>2</sup> )	212	305	610
		Coverall (CLY 582 124)		✓	
		Trousers (CLY 583 124)		✓	
		Labcoat (CLY 584 124)		✓	
		Jacket (CLY 585 124)		✓	
		Long Sleeve Polo Shirt (CLY 587 124)	✓		
		DL Labcoat (CLY 584 392)			✓
Approved Layers	Clydesdale 12.4 cal/cm <sup>2</sup> garment worn over a 10.9 cal/cm <sup>2</sup> rugby shirt has been tested and approved to offer the following performance:		EN61482-1-1, 37cal/cm <sup>2</sup> EN61482-1-2, Class 2		
	Clydesdale NOAH Jacket / Trousers or Coverall worn over: Clydesdale CarbonX Long SleeveTop, CLY 586 100 xx and		EN61482-1-2, Class 2		
	Clydesdale NOAH Jacket / Trousers / Coverall worn over Clydesdale NOAH Jacket / Trousers / Coverall			EN61482-1-1, 39cal/cm <sup>2</sup> EN61482-1-2, Class 2**	

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<b>COVERALL - PART NUMBERING</b>										
<b>ORDER CODE (x)</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>
<b>ORDER CODE y="R" REGULAR INNER LEG LENGTH 76 (30")</b>										
<b>CHEST</b>	88-96 (35-38)	92-100 (36-39)	96-104 (38-41)	100-108 (39-43)	104-112 (41-44)	108-116 (43-46)	112-120 (44-47)	116-124 (46-49)	120-128 (47-50)	124-132 (49-52)
<b>SLEEVE</b>	63 (25)	63 (25)	64 (25)	64 (25.5)	65 (25.5)	66 (26)	66 (26)	67 (26.5)	67 (26.5)	67 (26.5)
<b>SIZE ON LABEL</b>	XS	S	M	L	XL	2XL	3XL	4XL	5XL	6XL
<b>ORDER CODE y="T" TALL INNER LEG LENGTH 81 (32")</b>										
<b>CHEST</b>	88-96 (35-38)	92-100 (36-39)	96-104 (38-41)	100-108 (39-43)	104-112 (41-44)	108-116 (43-46)	112-120 (44-47)	116-124 (46-49)	120-128 (47-50)	124-132 (49-52)
<b>SLEEVE</b>	67 (26.5)	67 (26.5)	68 (27)	68 (27)	69 (27)	69 (27)	70 (27.5)	70 (27.5)	71 (28)	71 (28)
<b>SIZE ON LABEL</b>	XST	ST	MT	LT	XLT	2XLT	3XLT	4XLT	5XLT	6XLT

<b>TROUSERS - PART NUMBERING</b>										
<b>ORDER CODE 2 (y = "R") REGULAR INSIDE LEG LENGTH 30"</b>										
<b>ORDER CODE 1 (xx) WAIST</b>				30	32	34	36	38	40	42 44 46
<b>ORDER CODE 2 (y = "T") TALL INSIDE LEG LENGTH 32"</b>										
<b>ORDER CODE 1 (xx) WAIST</b>				30	32	34	36	38	40	42 44 46
<b>ORDER CODE 2 (y = "X") EXTRA TALL INSIDE LEG LENGTH 34"</b>										
<b>ORDER CODE 1 (xx) WAIST</b>				30	32	34	36	38	40	42 44 46

<b>JACKET / LAB COAT / POLO SHIRT - PART NUMBERING</b>										
<b>ORDER CODE 1 (x)</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>
<b>CHEST</b>	88-96 (35-38)	92-100 (36-39)	96-104 (38-41)	100-108 (39-43)	104-112 (41-44)	108-116 (43-46)	112-120 (44-47)	116-124 (46-49)	120-128 (47-50)	124-132 (49-52)
<b>SLEEVE</b>	63 (25)	63 (25)	64 (25)	64 (25)	65 (25.5)	65 (25.5)	66 (26)	67 (26.5)	67 (26.5)	67 (26.5)
<b>SIZE ON LABEL</b>	XS	S	M	L	XL	2XL	3XL	4XL	5XL	6XL

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#### 3. Cleaning, Maintenance and Life Span:

The PPE should be kept clean & dry to provide an optimum level of protection. N.B: SOILED CLOTHING PROTECTS LESS



The PPE should not be washed in temperatures over 70°C\*



The PPE is dry-cleanable. Do not use trichloroethylene



Tumble dry at normal temperature\* Do not over-dry



Chlorine bleaches such as those containing sodium hypochlorite, oxygen bleaches such as hydrogen peroxide as well as soaps (salts of fatty acids) should not be used to wash the PPE either separately or in detergents as they may affect the protective properties of the PPE

\*Note: CLY 587 Polo Shirts are intended for home washing only. The ideal wash temperature is 40°C (maximum 50°C) and if garments are tumble dried, this should be on a gentle cycle and the garments should be removed before fully dry and line dried. Over-drying will result in shrinkage. In order to provide an optimum level of protection, the PPE must be maintained in its original condition. If the PPE becomes damaged due to factors such as rips, cuts, abrasion and perforation, it may not provide the optimum level of protection and must be replaced. Do not attempt to repair the PPE.

**N.B: INSPECT THE PPE BEFORE EACH USE. DO NOT ATTEMPT TO USE THE PPE FOR ITS INTENDED PURPOSE IF ITS CONDITION IS IN DOUBT!**

The PPE will maintain its protective properties until such time as the condition of the PPE is in doubt. In other words the PPE will maintain its protective properties for its life span - the arc flash and flame retardant properties are permanent and cannot be washed out.

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#### **4. Compatibility and Accessories:**

Suitable combinations of the PPE must be worn to provide complete limb and torso protection from the thermal effects of an electric arc flash. Clydesdale NOAH coveralls may be worn as a complete protection system. Clydesdale NOAH Trousers should be worn in combination with either a Clydesdale NOAH long sleeve polo shirt, jacket or labcoat.

It is strongly recommended when a Clydesdale NOAH jacket or labcoat is worn, that a flame retardant undergarment such as a Clydesdale NOAH long sleeve polo shirt is worn.

Clydesdale can also offer Arc-Rated CarbonX underwear that has been tested to offer EN61482-1-2, Class 2 (7kA, 0.5s) when worn under NOAH Jacket / Trousers or Coverall. See table on previous page for part numbering details.

Any clothing worn under a Clydesdale NOAH garment should be of a non-melting construction to ensure the effectiveness of the NOAH protection.

For neck and head protection from the thermal effects of an electric arc flash, the use of a Clydesdale Arc Flash Protection Hood with an equal or higher ATPV class to the main PPE is recommended. Please contact Clydesdale for further details.

For hand protection it is recommended that appropriate Clydesdale Insulating Gloves are worn in conjunction with Clydesdale Leather Protector Gloves to provide mechanical protection. Please contact Clydesdale for further details.

Foot protection should be provided for with heavy duty leather work shoes which will normally provide a significant level of protection for ATPV levels of 5 cal/cm<sup>2</sup> and above.

No modification of the PPE is permitted, including affixation of logos, after the EC Type-Examination.

#### **5. Storage and Transport:**

The PPE is packed and delivered in a clear polythene bag. The PPE should be stored or transported, preferably in a similar polythene bag, in a dry and dust free environment, protected from mechanical effects, UV light, temperature extremes and chemicals which may damage the PPE. This polythene bag must be disposed of in accordance with company and government guidelines

#### **6. Significant Markings:**

Each PPE garment has an external transfer marking indicating the ATPV level to which the PPE can protect the user. This depicts a flame symbol together with the ATPV rating in cal/cm<sup>2</sup> of the garment. A label sewn into the hem of the PPE indicates the ATPV rating, CE conformity mark, cleaning and maintenance instructions, manufacturers details, product reference numbers, EN ISO 11612 references and performance levels, additional relevant standards the PPE conforms to as well as a pictogram reference to the availability of this product information.

#### **7. Details of Notified Body:**

BTTG Certification Services, Unit 14, Wheel Forge Way, Ashburton Rd West, Trafford Park, Manchester, M17 1EH, United Kingdom. Notified Body #0339