New PYRAD® Switch Suit by GORE-TEX LABS Presented at A+A

Putzbrunn, 2 October 2023 - **Designed as a new solution for electrical engineers and safety professionals needing Class 2/ ATPV ≥ 40 cal/cm² PPE protection against high-risk arc flash incidents, GORE-TEX Professional (Gore) is introducing to the European market new PYRAD® switch suits by GORE-TEX LABS at this year's A+A fair in Duesseldorf, Germany. Already widely adopted by electrical workers and safety professionals in North America, the switching suits are made from an advanced, multi norm, arc rated PYRAD® fabric technology. It is the only single-ply Class 2 40 cal material currently available which provides the end user with the benefits of being lightweight, less bulky and breathable. It also offers up to 39% more flexibility, than other products in the market, this means a high freedom of movement which helps to reduce muscle fatigue.**

"The high breathability of PYRAD® switch suits is important for thermal regulation because end users are often working in arc flash risk areas indoors and in confined spaces. This means wearers no longer have to compromise between breathable comfort and reliable safety protection", says Miguel Calixto, arc/FR product specialist at GORE-TEX Professional.

Switching suits, made up of bib trousers, jacket and full (bee-keeper style) hood are worn together when there is any risk of an arc flash incidents: IEC 61482-1-2 Class 2 and IEC 61482-1-1 APTV ≥40cal/cm².

Until now, typical Class 2/ 40 cal garments that are required to protect workers against the thermal hazards of electrical arc flashes with high incident energy risk exposures have been made from multi-ply fabric systems resulting in them being bulky, restricting movement, heavy and uncomfortable to wear.

Science & technology behind new PYRAD® switch suits by GORE-TEX LABS

Gore's research and development team have combined 4 functional components into a durable single-ply material that interact with each other. The fabric weighs in ≤330g/m² which means it is up to 20% lighter than other products currently available in the market. It consists of a nylon outer shell, PYRAD® fabric technology by GORE-TEX LABS, an advanced membrane, and a flame-resistant backer.

Nylon outer shell: this fabric can be dyed into a number of different colour fast shades, has tensile strength and offers excellent abrasion and wear resistance.

PYRAD® Fabric Technology: this adds durable heat, flame, and arc resistant protective properties to the nylon outer shell. The flame-resistant protection from PYRAD® fabric technology is not a chemical treatment or coating. It is inherent to the fabric and as a result it is durable for the life of the product and doesn't wear off over time. It is made up of countless dots which rapidly react to heat during an arc flash exposure, even before the outer

shell has chance to burn. The reaction of the dots causes them to expand by more than 10x larger than their original size and form a stable insulating protective shell of carbonaceous char. This blocks the transfer of heat to skin and stops flame propagation.

Membrane: an extremely light weight and wafer-thin membrane which provides highly breathable and thermally stable properties for strength, flexibility, and mechanical integrity.

Flame resistant backer: this component further reduces the transfer of heat to the wearer. Miniscule air pockets caught between the Gore membrane and this backer expand instantly on contact with heat to form an additional layer of protection.

Key Benefits and Features

When compared to multi-layer switching suits, the benefits of Arc Rated PYRAD® switch suits by GORE-TEX LABS made from the single-ply fabric technology include:

- Reduced bulk and high freedom of movement meaning less muscle fatigue,
- A unique combination of the lightest weight fabric with Class 2/ 40 cal arc protection,
- Breathable garments so wearer feel more thermally comfortable.

Extensive tests have proven that during arc flash exposure the laminate provides best-in-class mechanical integrity:

- Blocks convective and radiant heat,
- Stops flame propagation,
- Forms a carbonaceous char meaning, the laminate keeps its physical integrity and will not flake or disintegrate, and no holes are formed.

EU Multi norm compliance of the Arc Rated PYRAD® switch suits by GORE-TEX LABS includes:

- Protective clothing against the thermal hazards of an electric arc, IEC 61482-1-2 Box test Class 2 (7 kA) and IEC 61482-1-1, Open-air arc test ATPV ≥ 40 cal/cm²
- Protective clothing against heat and flame, EN ISO 11612 A1, A2, B1, C1, D2, E1, F1
- Protective clothing for use in welding and allied processes,
- EN ISO 11611 Class 1 A1+A2
- Electrostatic dissipative protective clothing, EN 1149-3/-5
- Protective clothing against liquid chemicals, EN 13034 Type 6
- OEKO-TEX® STANDARD 100 Certification

Gore revolutionized the outerwear industry with waterproof, breathable GORE-TEX Fabric more than 40 years ago and remains a leading innovator of performance apparel. Gore fabrics products provide comfort and protection in challenging environments and in everyday life, enabling wearers to safely and confidently achieve and experience more. From hiking in downpours to defense operations and fighting fires, Gore's deep understanding of consumer and industry needs drives development of products with meaningful performance advantages. gore-tex.com and goretexprofessional.com

About Gore

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