



Stunt team tests flame-retardant PYRAD® technology from GORE-TEX Professional

Improvised explosive devices and accidents when refueling military vehicles: real life operational scenarios simulated in fitness-for-use tests

Putzbrunn, (9 November 2023) - Military personnel must be able to trust that their flame-retardant equipment will protect them from risks in the field - be it an explosion from an improvised explosive device (IED) or an accident while refueling a military vehicle or aircraft. Combat suits engineered using PYRAD® product technology from GORE-TEX Professional protect against sudden heat and open flames. In combination with an additional GORE-TEX membrane, PYRAD® technology also offers protection against common chemicals, fuels such as gasoline or diesel and most diluted acids and alkalis. These protection levels have been verified by various tests carried out by GORE-TEX Professional with an experienced stunt team. Realistic scenarios were simulated that military personnel may be exposed to.

GORE-TEX Professional (Gore) will be presenting PYRAD® product technology for armed forces at Milipol 2023 in Paris (November 14-17, 2023) at booth 5 C 110.

PYRAD® product technology is based on a physical effect: it consists of countless small reactive graphite particles that are evenly incorporated into the fabric. If the particles are strongly heated by a sudden flame, they instantly react to form a stable, gapless carbon layer, which effectively prevents heat flow through the laminate and stops the spread of the flame.

Paul Jennewein, product specialist at GORE-TEX Professional for flame-retardant military clothing, explains: "The PYRAD® product technology takes soldiers' equipment to a new level. It offers critical protection against sudden flames whilst also providing a high level of comfort and freedom of movement, thanks to the lightweight fabric."

Durable heat and flame barrier with and without membrane

PYRAD® product technology is used for combat suits either without a membrane or with a GORE-TEX® membrane, depending on the situation and weather conditions. PYRAD® technology by GORE-TEX LABS provides effective protection against sudden heat and open flames - and combined with an integrated GORE-TEX membrane, also protects against common chemicals, common fuels such as gasoline and diesel, most diluted acids and alkalis.

Combat suits with PYRAD® textile technology without a membrane are ideal for operations in warm areas. Soldiers then only need one combat suit with integrated flame protection. They are also suitable as a battle dress uniform (BDU), especially for physically demanding activities: the uniform contains only one textile layer and can therefore also be worn comfortably under a combat suit.

PYRAD® technology from GORE-TEX LABS in a fitness-for-use test

Gore had the "fitness for use" and operational suitability of the PYRAD® product technology simulated in a test emergency scenario. Both types of combat suits underwent tests which were conducted in a strictly controlled environment and with safety as a top priority:

Accident during refueling of military vehicles or aircraft



Under combat conditions when refueling military vehicles and aircraft, fuel can get onto soldiers' clothing and ignite through contact with an ignition source such as open fire, sparks or extremely hot surfaces. In the test, a GORE-TEX PYRAD® Defence FR rain suit was sprayed with a diesel-petrol mixture and ignited by a small gas deflagration.



Heat and flames from improvised explosive devices

Improvised explosive devices (IEDs) are a threat to soldiers on missions around the world. In the test a PYRAD® combat garment by GORE-TEX LABS was confronted with two large gas explosions, a continuously burning gas flame as a heat source and lycopodium used as an additional fire effect in the background.

"The tests under real conditions have impressively shown that the PYRAD® technology delivers what it promises: our technology protects emergency personnel who stand up for our society - under the toughest conditions," Paul Jennewein, product specialist at GORE-TEX Professional for military clothing, evaluates the fitness-for-use tests.

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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