

RESPONDING TO A

CHANGING

WORLD

TECHNICAL RESCUE AND WILDLAND PPE

A CHANGING WORLD



Firefighting can be highly unpredictable, so it can be a challenge for firefighters to be equipped with the protective gear to suit a given situation. For example, the appropriate fire protective clothing may vary to tackle the different challenges posed by technical rescue and wildland firefighting. Therefore, there can be advantages to innovative approaches to PPE that can prepare first responders to face unpredictable circumstances with flexibility and peace of mind.



EARTH

As the global population increases, some believe that more people now live in earthquake-prone regions [1], leading to a rise in emergency response missions for urban search and rescue. Furthermore, the number of electric vehicles on our roads is growing [2], which poses a higher risk of arc flash injuries during road traffic interventions. Therefore, first responders should consider whether they require PPE that protects against these unexpected hazards.



AIR

Many scientists are concerned that extreme weather, cyclones, hurricanes, and floods are becoming increasingly dangerous worldwide [3]. In the aftermath of such disasters, there would be a growing need to rescue people in complex and unexpected situations. In responding to such new challenges, emergency responders should consider whether they need to be equipped with PPE designed to safeguard against the risks accompanying unpredictable scenarios.



FIRE

In some places, fire season is no longer just a season. Wildland fires have become prevalent year-round and are becoming [4] increasingly severe. As a result, some firefighters are engaging in more prolonged and dangerous interventions, so they should consider whether they require PPE that is light, breathable and optimised for extended wear in hot environments.



WATER

Rising water levels mean over 14,000 areas in the EU are at significant risk of flooding [5]. To rescue individuals during floods, heavy rainfall, or river-related emergencies, emergency responders should consider whether they need to be equipped with waterproof and breathable PPE specifically designed for rescue missions involving water.



WILDLAND FIREFIGHTING

DUTY SPECIFIC CLOTHING

Wildfires have become increasingly common and severe due to climate change, deforestation, and other human activity [6] [7].

Many experts conclude that these fires occur more frequently, are more challenging to battle, are hotter, and last longer by creating hot and dry conditions that help fires spread faster, burn longer, and rage more intensely. Therefore, it is worth considering whether to have tailored protective clothing for this type of application.

MSA BRISTOL X4 WILDLAND

The single-layer **X4 Wildland** garment is designed for long-duration interventions in hot environments where comfort, lightweight, and safety can be critical. This suit is an excellent choice for open-area fires where wearing a structural suit could be too inefficient. The X4 Wildland suit extends the X4 family with the same cut and style as the premium structural suit, ensuring the same level of ergonomics.

Compliance:

- EN ISO 15384:2020 | EN 1149-5:2018

Technical Info:

- Made with Lenzing™ FR and aramid blend fabric
- Features 3M® 50mm Heatseal segmented triple trim reflective; breathable, flexible and tested durability of up to 50 washes.
- Washing temperature: 60°C.
- Available in HiVis Yellow with Navy contrast panels
- Available in 40 different sizes, catering to both male and female styles.

Main partners:



Fit for purpose

- During intense interventions, firefighters often wear duty-specific garments throughout the whole operation instead of discarding non-compatible suits due to overheating.
- The lightweight, single-layer jacket has underarm gussets for enhanced sweat and heat transfer.
- The trousers have double bottom layer reinforcements for better support in environments with rugged vegetation.

Lightweight

- A lightweight, single-layer solution for long-duration interventions in hot environments can help increase the comfort and efficiency of firefighters.

Ergonomics

- Fitted design provides outstanding freedom of movement and reflects the changing duties of firefighting in open areas.

Inclusive design

- Available in both male and female designs and aims to optimise the fit for all people.

Premium quality

- High-quality materials help provide a great level of protection and visibility to help enhance safety.



TECHNICAL RESCUE

DUTY SPECIFIC CLOTHING



Many scientists are concerned that extreme weather events are becoming increasingly frequent, and natural disasters such as floods, droughts, heat waves, tornados, and extreme rainfall are occurring with greater intensity. This is thought to have led to an increase in the number of rescue interventions. New hazards, such as electric car accidents and arc flash risks, also pose new challenges. Consider whether it will be crucial for first responders to have specific equipment, training, and awareness to address the impact of these changes on the fire and rescue services.

MSA BRISTOL X4 TRW-HYBRID

The **X4 TRW-Hybrid (Technical Rescue Wildland Hybrid)** is a versatile suit that can be used for both technical rescue and wildland firefighting. It features a moisture barrier that can be easily zipped in or out to make the suit compliant with either rescue or wildland-only requirements. The X4 TRW-Hybrid suit extends the X4 family with the same cut and style as the premium structural suit, ensuring the same level of ergonomics.

Compliance:

- EN 16689:2017 | EN ISO 15384:2020 | EN 1149-5:2018

Technical Info:

- Double or single layer, Outershell made of Lenzing™ FR and Aramid blend, plus removable GORE-TEX® CrossTech® Flameliner moisture barrier.
- Features 3M® 50mm Heatseal segmented triple trim reflective; breathable, flexible, and tested durability of up to 50 washes.
- Washing temp 60C.
- Available in Navy/Yellow and Red/Yellow colours.
- Available in 40 sizes, catering to both male and female styles.

Main partners:



Versatile/multipurpose

The suit can be converted from technical rescue to wildland by zipping in or out of the moisture barrier.



Fit for purpose

Lightweight and comfortable, suitable for outdoor interventions, where structural garments can be uncomfortable and unnecessary.



Comfort

Fitted design provides greater freedom of movement and better reflects the evolving responsibilities of technical rescue teams and wildland firefighters.

The removable GORE-TEX® Crosstech® Flameliner provides durable water resistance, breathability, and protection against blood-borne pathogens, per GORE [8].



Cost optimisation

Choosing a convertible garment can effectively reduce costs and optimise your budget as it serves two applications to a high standard.



Inclusive design

Available in both male and female designs and aims to optimise the fit for all people.



Premium quality

High-quality materials provide a great level of protection and visibility, to help enhance safety.



ABOVE-THE-NECK SOLUTIONS

GALLET F2XR – WILDLAND AND TECHNICAL RESCUE HELMET

GALLET

F2XR

The **GALLET F2XR** is a multipurpose helmet tested and certified to meet the latest standards for various applications such as wildland firefighting, technical rescue, urban search and rescue, climbing, and water rescue. The helmet is equipped with a range of accessories that can be easily integrated on the go, which can make it suitable for long-duration and physically demanding interventions.



Wildland Firefighting Helmets

EN16471:2015



Water Rescue Helmets

EN1385:2012 +
PAS 028:2002



Technical Rescue Helmets

EN16473:2014



Mountain Climbing Helmets

EN12492:2012



GALLET F2XR ACCESSORIES

The GALLET F2XR is an intelligent helmet platform that can simplify your work by seamlessly incorporating multiple accessories you rely on, like a dual-beam headlamp with a tail light, an adjustable internal ocular visor, and water rescue ear protection. Regardless of the circumstances, the accessories of the F2XR were specifically designed to be easy to adjust with or without gloves and for both right and left-handed wearers.

RESPIRATORY PROTECTION IN COMBINATION WITH GALLET F2XR

For first responders seeking respiratory solutions that can be easily integrated with other personal protective equipment, MSA offers Advantage Respirators with a comprehensive filter range. These systems are available in half- and full-face masks and protect against solid and liquid substances, toxic gases, and substances such as radioactive and carcinogenic particles.

EN 136:1998 | EN 140:1998 | EN143:2021 | EN14387:2008





MSA – THE SAFETY COMPANY

Our business is safety. It's what we live and breathe, and we've been passionate about protecting people, facilities, and the environment for over a hundred years.

We're the world's leading manufacturer of high-quality safety products and while MSA products may be simple to use and maintain, that's purely by design. They're also highly sophisticated devices and protective gear – the result of countless R&D hours, relentless testing and an unwavering commitment to quality that saves lives and protects millions of men and women every single day.

The company's comprehensive product line is used by workers around the world in a broad range of markets, including the oil, gas and petrochemical industry, the fire service, the construction industry, mining and the military. MSA's core products include protective clothing, self-contained breathing apparatus, fixed gas and flame detection systems, portable gas detection instruments, industrial head protection products, fire and rescue helmets, and fall protection devices.

To find out more about the MSA Bristol range, visit: MSAsafety.com/MSA-Bristol

Sources:

1. Is earthquake activity increasing? | April 2019 (no date) British Geological Survey (BGS).
Available at: <https://www.earthquakes.bgs.ac.uk/research/earthquakeActivity.html>
2. Marché de la voiture électrique : En pleine expansion dans le monde (2020) Elite Auto.
Available at: <https://www.elite-auto-actu.fr/actualite-auto/auto-electrique-hybride/2020/07/20/marche-de-la-voiture-electrique-en-pleine-expansion-dans-le-monde/>
3. Earth's changing climate (no date) National Geographic.
Available at: <https://education.nationalgeographic.org/resource/earths-changing-climate/>
4. The effects of climate change (2023) NASA.
Available at: <https://climate.nasa.gov/effects/>
5. Commission publishes new flood risk areas viewer to raise awareness about significant flood risks (2023) European Commission.
Available at: https://environment.ec.europa.eu/news/commission-publishes-new-flood-risk-areas-viewer-raise-awareness-about-significant-flood-risks-2023-10-13_en
6. Climate change and wildfires (2020) European Commission.
Available at: https://joint-research-centre.ec.europa.eu/system/files/2020-09/09_pesetaiv_wildfires_sc_august2020_en.pdf (Accessed: 07 March 2024).
7. How climate change drives heatwaves and wildfires in Europe | Reuters (2023) Reuters.
Available at: <https://www.reuters.com/business/environment/how-climate-change-drives-heatwaves-wildfires-europe-2023-08-17/>
8. Tex CROSSTECH® Product Technology: Gore-Tex Professional (no date) GORE.
Available at: <https://www.goretexprofessional.com/technologies/crosstech>

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