

History of fire fighter gloves

Historically, fire fighters have not had access to the same level of protective clothing used today. Fire fighting is a dangerous profession that requires specialised equipment to effectively and safely mitigate a fire emergency. Originally, fire fighters lacked the specialist equipment to be able to enter buildings, with many fires being dealt with outside a structure.

Early in the history of fire fighting, a fire fighter's outer clothing was more for warmth and dryness than for protection from fire.

Since it is clear that fire fighting techniques will not change in the near future, the burden of protecting hands and wrists and thereby reducing or eliminating most injuries, lies primarily with the fire fighters' gloves. Therefore, gloves must be constructed to ensure adequate levels of protection.

The personal protective equipment structural fire fighters wear today is drastically different than what they wore in the early years. Early gloves used by fire fighters were typically made of leather.

Post-war uniforms incorporated major technological improvements in fabrics, which reflected that the brigades were now tackling more hazardous situations, such as industrial accidents and complex road traffic accidents.

Fire resistant asbestos suits, hoods, gloves and aprons used in the 1920s have been replaced with safer and more effective epoxy coated aluminium fibres and materials that utilise complex fire resistant and retardant chemicals.

Today's gloves are made of a blend of high-performance fibres making them resistant to heat and fire. Dexterity is the key issue though.

Gloves protect the fire fighter's hands from the heat and sharp objects they encounter as well as to protecting them while using the powerful equipment, ropes and hoses. Past fire fighters had to supply their own leather gloves. Gloves today are made of a three-layer fire and heat resistant, high-performance fabric such as Kevlar.

The gloves are required by the US National Fire Protection Association (NFPA) to withstand and protect the fire fighter from flame, heat, vapour, liquids and sharp objects.

Many types of hand protection are available to fire fighters today, the most common being the work glove and the structural fire fighting glove.

Work gloves are a must for all fire services. They are used when gloves are required but actual fire fighting gloves are not. They allow better mobility to perform various types of functions from relaying hose beds to vehicle maintenance. Work gloves are usually made of leather or a leather-like material.

Extrication gloves are similar in design and appearance to auto mechanic's gloves but are made of a heavier rip-proof and puncture-resistant material such as Kevlar while still lightweight enough to allow manual dexterity to operate rescue equipment and sometimes enough to take a victim's pulse. These are used in urban search and rescue, vehicle extrication and related applications but are not rated for firefighting.

For an actual working fire, structural fire fighting gloves must be worn. Structural gloves tend to be the last piece of protective equipment to be donned; usually because the free dexterity of the fingers is required to perform functions such as properly placing a self-contained breathing

apparatus (SCBA) mask on and accurately tightening a helmet strap. The gloves will fit over the wristlets and under the distal part of the coat sleeve, ensuring full enclosure of the latter arm.

Gloves are designed to protect from extreme heat and various penetrating objects and to allow dexterity. Usually, the latter is sacrificed to give adequate protection from heat and sharp objects. Newer gloves are more lightweight and don't lose their dexterity when they dry after becoming wet, the way leather gloves may.

Based on NFPA research, PPE was drastically improved. This culminated in the NFPA 1971 Standard on Protective Clothing for Structural Fire Fighting. It specifies "the minimum design, performance, safety, testing and certification requirements for structural fire fighting protective ensembles and ensemble elements that include coats, trousers, coveralls, helmets, gloves, footwear and interface components."

The evolution of fire fighter's helmets, clothing and personal safety devices have certainly enabled more people to be rescued from the death sentence that a fire was. Without the PPE of today, fire fighters would be unable to enter burning buildings to rescue those trapped inside nor would they be able to extinguish the fire so quickly.

The death rate by fire would skyrocket as would the destruction made by the inability to rapidly contain a fire.

Large strides have been made in the evolution of fire fighter's personal protection equipment. As a result, the fire fighters of today are much safer than those of decades past whenever confronted with a roaring inferno or even a small fire. ▲