




MONTGOMERY COUNTY FIRE AND RESCUE SERVICE

Isiah Leggett
County Executive

Scott E. Goldstein
Fire Chief

August 25, 2016

To: All Personnel

From: Assistant Chief John J. Gallo 
Joint Health & Safety, Committee Chair

Subject: Fire Dex Glove

The Joint Health & Safety Committee conducted secondary evaluations of the new Fire Dex structural glove based on a report of shrinkage when exposed to extreme thermal conditions. As with any new piece of protective clothing, it is important to know the specifics of the glove, its construction, and proper use.

MCFRS conducted an extensive wear trial to determine the best glove for our organization. At the end of the wear trial, the Fire Dex glove was one of two highly recommended gloves. In addition to the initial wear trial, seven of the evaluators put the gloves through extensive testing under high heat conditions. In the end, the Fire Dex glove was the best performing glove both in dexterity and in thermal protection.

There are three characteristics of the Fire Dex glove personnel must understand:

1. The fingertips may feel like they will pull out when doffing the glove and may take a second or two of twisting your finger to get your finger tip in the glove just right. This is not a flaw but a design of the glove to improve dexterity. The interior liner of the glove is sewn and glued to the exterior shell of the glove down the sides and circumferential around the last knuckle, but not at the fingertip itself. This design provides greater dexterity but initially takes time getting used to.
2. The glove is more prone to discoloration because of the high grade of materials which are used to make a supple leather which allows greater dexterity. Heat discoloration is okay as long as there is no shrinkage of the glove, and as long as the glove's outer shell does not become hard (typically found when the glove experienced high heat directly conducted).

Health & Wellness Section

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3. Glove have an acceptable range of shrinkage when exposed to fire conditions. The NFPA 1971 standardized test allow a minimal amount of shrinkage when exposed to 500 degrees Fahrenheit for 5 minutes with glass beads inside the glove.

a. Glove shrinkage was experienced by an instructor while stoking a fire for a fire class. Through testing we were able to recreate the shrinkage and found that it occurred at temperatures somewhere between 900 degrees and 1200+. It was also found that this occurred before any significant heat was felt by the wearer. During these evolution, the older style issued blue Lion glove experience no shrinkage but the wearer experienced heat at an uncomfortable level and had to remove their hand from the heat source.

b. The Fire Dex glove affords a greater level of heat protection but will also shrink when exposed to extreme heat conditions. This shrinkage may be a positive outward warning of extreme conditions before heat is felt. If shrinkage occurs the glove will continue to provide protection but the wearer must move to a safe area and cool the environment. During testing all gloves were found to have shrinkage when exposed to high heat (direct flame impingement with a flare).

c. It is also important that the gloves be used properly and not exposed unnecessarily to extreme heat or conduction - do not pick up burning logs on a chimney fire, do not leave your hands on the hood of a car during a car fire, etc. DO use the gloves as you typically would to work a fire.

d. Gloves should be routinely inspected as should all PPE. Gloves should be retired when:

- i. They fail NFPA 1851 [inspections](#)
- ii. There is a breach in the outer shell/thermal/moisture barrier
- iii. They shrink due to high heat and greatly diminish dexterity
- iv. They are not donnable

Recommended You Tube Links to review:

[Video – MCFRS Structural Firefighting Glove Overview part 1](#)

[Video 2 – MCFRS Structural Firefighting Glove Overview part 2](#)

Fire Dex Glove Description:



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Palm 1 (Palm Strap) - Cow split / Cow Split / Polyurethane / Nomex knit
Palm 2 (Palm body) - Cow split / Polyurethane / Nomex knit
Palm 3 (Finger sides) - Goat / Polyurethane / Nomex knit
Back 1 (knuckle guard) - Cow split / Cow grain/ Polyurethane / Nomex knit / Nomex knit
Back 2 (Back body) - Cow grain / Polyurethane / Nomex knit / Nomex knit
Back 3 (Thumb, Finger backs) - Cow split / Polyurethane / Nomex knit / Nomex knit
Back 4 (Fingertip) - Cow split / Polyurethane / Nomex knit
Back 5 (Finger back side) - Goat / Polyurethane / Nomex knit / Nomex knit

For additional information regarding this subject, please contact Assistant Chief John J. Gallo.

cc: File



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