



Technical Advisory

Title: Wildland Fire Fighting – Protective Clothing

Issued: November 2002

I. Scope

This document specifies the Office of the Fire Commissioner's minimum recommendations for Personal Protective Equipment for Wildland Fire Fighting. These recommendations are based on typical wildland fires encountered by Saskatchewan Fire Departments. These typical wildland fires are grass fires, crop fires and light brush fires.

II. General

1. Protective garments, gloves, footwear, helmets and accessories shall be provided for every fire fighter engaging in wildland fire fighting.
2. Protective clothing shall be fitted so that overlap of clothing is provided at the waist, ankles and wrists.
3. Fire fighters shall ensure that accurate sizes of protective clothing are worn.
4. Equipment such as helmets, protective footwear, protective gloves, goggles and respirators must meet any of the standards listed in the Fire Fighters Code of Practice published by OH&S, including the additional requirements identified in this bulletin.

III. Garments (clothing)

1. 2-piece and 1-piece garments are both acceptable.
2. All collars must remain upright.
3. All cuffs (wrist & ankle) shall have a tight snug fit.
4. Pockets of protective garments shall have a means of fastening them closed.
5. Pass-through openings of protective garments shall have a means of fastening them closed.
6. All protective garments that encompass the neck area shall have a closure system at the neckline.
7. Any metal components or closure system shall not come in direct contact with the body.
8. Clothing should have flame resistance so that it does not contribute to burns resulting from heat transfer. Materials should not melt or shrink at elevated temperatures.
9. The clothing should also have a thermal heat loss factor, to reduce retention of body heat caused by long work periods.
10. Recommended textile materials are:
 - a. Brand names such as Nomex, PBI, Aramix, Indura
 - b. Knit garments of 100% cotton, 100% wool
 - c. Suggested pant fabric weights are 8oz/yd² to 12oz/yd²
 - d. Suggested shirt fabric weights are 5.5 oz/yd² to 6.5 oz/yd².
 - e. Suggested one-piece garment weights are 5.5oz/yd² to 12oz/yd².

Note: Knit fabrics provide better protection from radiant heat than woven fabrics.

IV. Protective Footwear

1. Protective footwear shall consist of a sole with heel, upper, insole and shank. The quarter section of the boot shall be designed to provide an adjustable, snug fit for support around the ankle and lower leg.

2. Protective footwear height shall be a minimum of 8.0in. (20.3 cm). The height shall be determined by measuring inside the boot from the centre of the heel up to the topline at the centre back. Removable insoles shall be removed before measuring.
3. Heel breast shall not be less than 0.5 in. (12.7 mm).
4. Metal parts shall not penetrate from the outside into the inside at any point, unless covered.
5. No part of the footwear, other than the laces, shall melt, and all accessories shall remain functional.
6. All boot material shall be puncture resistant.
7. Steel-toed boots are strongly recommended due to the possible use of hand and power tools.

V. Protective Gloves

1. Protective gloves for wildland fire fighting shall be designed to minimize the effects of flame, heat, sharp or abrasive objects, hand tool operation and other hazards that are encountered during wildland fire fighting.
2. Gloves shall be designed to minimally interfere with physical movement and dexterity.
3. Glove bodies shall be designed such that they closely conform to the wrist and extend a minimum of 1.0 in. (2.54 cm) past the wrist crease.

VI. Protective Helmets

1. All materials used in the construction of the helmet that are designed to come in contact with the wearer's head or skin shall be nonirritating to normal skin.
2. Helmets shall have a brim or peak.
3. Helmets shall be designed to consist of a shell and a means of absorbing energy. There shall be ventilation between the head and the shell.
4. Helmets shall be generally dome shaped.
5. Head fit assemblies shall be provided and shall be removable and replaceable. Fire fighters shall ensure that the helmets fit properly.
6. Sweatbands shall be provided and be either removable or replaceable.
7. The helmet shall be designed so that the distance between the top of the head and the underside of the shell cannot be adjusted beyond manufacturer requirements.
8. Chinstraps shall be provided that attach to the helmet shell.
9. Helmets shall have reflective markings on the exterior of the shell and are visible from all sides.
10. Helmets shall be impact, penetration, flame, and heat resistant.
11. Helmets shall also be electrically insulated.

VII. Accessories

1. Accessories such as utility belts, goggles, back packs, respirators etc. should not be made of materials that melt, drip, or ignite at temperatures of 350 F (177C) or less.
2. Air-purifying respirators or dust masks are strongly recommended for fire fighters working in heavy smoke concentrated and ashened areas.
3. Eye protection (goggles, safety glasses, etc.) shall be provided for fire fighters engaging in wildland fire fighting.
4. Head and neck protection (balaclava, etc.) shall be provided for fire fighters engaging in wildland fire fighting.