

South Carolina Department of Labor, Licensing and Regulation
Division of Labor
Office of Occupational Safety and Health
Columbia, South Carolina 29211

OSH Program Directive Number 82-1910.156-1

Subject: Subarticle 6, Section 1910.156 (e) (3) (ii) Fire-Resistive Coat Requirements for Fire Brigades (Departments).

Standard: Subarticle 6, Section 1910.156 (e) (3) (ii), Rules and Regulations, Commissioner of Labor, State of South Carolina.

Cross Reference to Federal Standards: 29 CFR 1910.156 (e) (3) (ii)

Background: A provision of the OSHA fire brigade (department) standard (1910.156 (e) (3) (ii)) requires that the performance, construction, and testing of fire-resistive coats be at least equivalent to the requirements of the National Fire Protection Association (NFPA) standard NFPA 1971-1975, "Protective Clothing for Structural Fire Fighting" with certain permissible variation from those requirements.

- a. Table 3-4.1.1 of NFPA 1971 specifies criteria for tearing-strength, color fastness, shrinkage, water absorption, and flame resistance. Paragraph 3-4.1.1 of NFPA 1971 specifies that these criteria are also applicable after five cycles of laundering and drying in accordance with American Association of Textile Chemists and Colorists (AATCC) Method 96-Test-VI-E.
- b. The commercial laundering and drying cycle specified in AATCC Method 96-Test-VI-E involves mechanical agitation of the materials in a water environment exposure of 203°-212° F. This is a severe test method which does not reflect actual washing of fire-resistive coats by fire fighters following manufacturers' instructions. The washing of fire-resistive coats by fire fighters when following manufacturers' instructions consists of spreading the garment out on the engine room floor (or other flat surface) and scrubbing the garment using warm water, mild detergent, and soft brush. This method of washing fire-resistive coats is preferred since it could enhance the longevity of the coats as compared to commercial laundering and drying.

- c. When fire retardant (FR) cotton coats are washed according to AATCC Method 96-Test-VI-E and the attributes of color fastness, shrinkage, and water absorption are evaluated, either no change would be expected, or the values vary by a small degree from those specified in NFPA 1971. These minor variations from the criteria specified in NFPA 1971 would not jeopardize the wearer's safety. However, if FR cotton coats are washed using manufacturers' instructions (which is the actual method of washing used by fire fighter), the protective integrity of the garments is maintained in accordance with the criteria specified in NFPA 1971.

Interpretation: Variations from the NFPA 1971 criteria pertaining to color fastness, shrinkage, and water absorption shall be noted as a de minimis violation only when fire-resistive coats are washed according to manufacturer's instructions. This technical violation does not reduce the wearer's safety.

Effective Date: This instruction is effective upon receipt and will remain in effect until cancelled or superseded by amendment to the Rules and Regulations.

William M. Lybrand, Director
February 26, 1982