



ABINGTON TOWNSHIP FIRE DEPARTMENT

OG – 200-111

Care & Maintenance of Structural Firefighting PPE

1.0 PURPOSE

The purpose of these Standard Operating Procedures is to establish a program for structural firefighting protective coats, pants, hoods, helmets, gloves and boots to reduce the safety and health risks associated with these items when they are poorly maintained, contaminated or damaged.

This document complies with *NFPA 1851 Standard on Selection, Care and Maintenance of Protective Ensembles for Structural Fire Fighting and Proximity Fire Fighting, 2014 Edition*.

This document describes the program parts, establishes program procedures and assigns roles and responsibilities to all uniformed members of the Abington Township Fire Department for implementing and maintaining the program. It is the objective of the program to set requirements for the proper handling, care, maintenance and retirement of protective ensembles.

2.0 RESPONSIBILITY

The responsibility to ensure that the above actions are taken in an appropriate manner are defined as indicated below:

2.1 Company Members (CM)

2.2 Company Officers (CO)

3.0 Program Parts

3.1 The program consists of the following parts:

- The compilation and maintenance of records
- Protecting the public and personnel from contamination
- The selection process related to structural firefighting ensembles.
- Inspection for soiling, contamination and damage
- Cleaning and decontamination
- Repairing damaged ensembles
- Storage while on duty and off duty
- Retirement, disposition and special incident procedure

3.2 The ATFD will outsource parts of the program. A qualified, independent Third-Party Contractor, selected by the individual ATFD Fire Company will provide:

- Advanced Inspection (reference Section 4.3)
- Complete Liner Inspection (reference Section 4.3)
- Cleaning and Decontamination (reference Section 5.1 through 5.4)
- All Garment Repairs (reference Section 6.1 through 6.3)

The selected contractor must be verified by a third-party certification organization for performing Advanced Inspection, Advanced Cleaning and Garment Repairs. A copy of the selected contractor's verification certificate shall be kept on file at the individual fire company.

3.3 Records

Records will be kept for all structural firefighting protective equipment in use. This includes all protective coats, pants, hoods, helmets, gloves and boots permanently assigned to ATFD members, as well as items available for temporary use.

At time of issue, the individual fire company will record:

- Person to whom the element is issued.
- Date and condition when issued.
- Manufacturer and model name
- Manufacturer's identification number
- Month and year of manufacture

While in use, all maintenance events will be recorded.

The individual fire company will record upon sending to the Third-party contractor:

- Date(s) sent, and contractor used for services.
- Reason for services

The third-party contractor will be responsible for records pertaining to the services they provide. These include:

- Date(s) and findings of advanced inspections
- Dates(s) and findings of advanced cleaning or decontamination
- Date(s) of repair(s) and description of repair(s)

After items have reached their useful life per criteria established in this document, the individual fire company will record:

- Date of retirement
- Date and method of disposal

All records will be kept on file for 12 months after the item has been retired, and then stored for a minimum of 5 years.

3.4 Manufacturer's Instructions

Manufacturer Care and Use Manuals are attached to all new NFPA 1971 compliant structural firefighting protective equipment. When issuing new protective equipment, Each Fire Company will provide the member to whom they have been issued with the Care and Use Manual.

It is the responsibility of the uniformed member to read Manufacturer Care and Use Manuals.

Manufacturer care and maintenance instructions must be followed.

A reference copy of the Manufacturer Care and Use Manual will be available at each Fire Company.

3.5 Protecting the Public and Personnel from Contamination

Structural firefighting protective equipment that has been determined to be soiled or contaminated must be removed from service and cleaned or decontaminated.

Structural firefighting protective equipment must not be worn or stored in fire department living quarters.

Structural firefighting protective equipment must not be taken home, washed at home or washed in public laundries.

The public must not be exposed to potentially soiled or contaminated structural firefighting protective equipment except during emergency operations.

4.0 Inspection

4.1 General Information

The purpose of inspection is to determine whether personal protective equipment has soiling, contamination or damage that makes it unsafe for use or could eventually result in making it unsafe for use.

When appropriate, universal precautions must be used.

If personal protective equipment is found to be soiled or contaminated, it must be cleaned or decontaminated before further inspection. Guidelines for determining whether ensemble elements should be cleaned are in Section 5.4.

4.2 Routine Inspection

Routine inspection is the responsibility of each member of the Abington Township Fire Department who has been issued personal protective equipment.

Routine inspection must be performed after each use and after each exposure to an event that could result in soiling or damage.

Performing a brief inspection before the start of each duty day is encouraged.

Protective coats and pants should be inspected for the following:

- Soiling
- Contamination
- Physical damage
- Rips, tears and cuts
- Damaged or missing hardware and closures
- Thermal damage

- Damaged or missing trim
- Seams becoming un-sewn and missing or broken stitches.
- Correct assembly of shell, liner and Drag Rescue Device (DRD)

DRDs should be inspected for the following:

- Installation in coat
- Soiling
- Contamination
- Physical damage
- Cuts, tears, punctures, cracking or splitting.
- Thermal damage
- Seams becoming un-sewn and missing or broken stitches.

Hoods should be inspected for the following:

- Soiling
- Contamination
- Physical damage
- Rips, tears and cuts
- Thermal damage
- Stretching or elongation of the face opening
- Seams becoming un-sewn and missing or broken stitches.

Helmets should be inspected for the following:

- Soiling
- Contamination
- Physical damage to the shell
- Cracks, crazing, dents and abrasion
- Thermal damage
- Physical damage to the earflaps
- Rips, tears and cuts
- Thermal damage
- Damaged or missing components of the suspension and retention systems
- Damage or missing components of the eye protection system
- Damaged or missing reflective trim.
- Seams becoming un-sewn and missing or broken stitches.

Gloves should be inspected for the following:

- Soiling
- Contamination
- Physical damage
- Rips, tears and cuts
- Thermal damage
- Inverted liner
- Shrinkage
- Loss of flexibility and/or loss of elasticity of the wristlet
- Seams becoming un-sewn and missing or broken stitches.

Boots should be inspected for the following:

- Soiling
- Contamination
- Physical damage
- Cuts, tears and punctures
- Thermal damage
- Exposed or deformed steel toe, steel midsole or shank
- Loss of water resistance
- Closure damage or not functioning.
- Seams becoming un-sewn and missing or broken stitches.

Additionally, interface components should be inspected to ensure that they continue to provide proper interface.

Members who suspect that a problem exists should inform one of the line officers of their fire company. The line officer should remove the gear from service and inform the chief of the fire company of the need for an advanced inspection.

4.3 Advanced Inspection and Complete Liner Inspection

Advanced inspections will be conducted whenever routine inspections indicate that a problem exists. Each ATFD fire company has contracted with a certified third-party contractor for the provision of advanced inspection. Advanced Inspections shall take place based upon needs identified through the routine inspection process.

The fire company will record upon sending to the third-party contractor:

- Date(s) sent, and contractor used for services.
- Reason for services

The third-party contractor will be responsible for records pertaining to the services they provide. These include:

- Date(s) and findings of advanced inspections
- Dates(s) and findings of advanced cleaning or decontamination
- Date(s) of repair(s) and description of repair(s)

5.0 Cleaning and Decontamination

5.1 General Information

The purpose of cleaning is to remove substances that could affect the performance of ensembles or personal protective equipment and to remove substances that are potentially hazardous to the user.

5.2 Routine Cleaning

Routine cleaning is the responsibility of each member of the Abington Township Fire Department who has been issued personal protective equipment. It is a light cleaning performed by the member without the elements being taken out of service.

Routine cleaning must be performed after each use and immediately after an emergency response to remove surface contaminants before they set in.

Personal protective equipment should be cleaned as follows:

- Locate and read the manufacturer's label for instructions on cleaning and drying.
- Brush off dry debris
- Rinse off other debris with a garden hose
- High velocity water jets shall not be used.
- Gently brush with a soft bristle brush when necessary and rinse again

If further cleaning is necessary, the following utility sink procedure should be used:

- Protective gloves and safety glasses must be worn.
- Pre-treat heavily soiled areas or spots with an approved cleaning product.
- Do not use chlorine bleach.
- Use warm water that does not exceed 40° C (105° F)
- Gently brush with a soft bristle brush
- Rinse thoroughly
- Air dry by hanging or placing in the PPE Dryer if that station is equipped with one.
- Do not dry in the sun.
- Inspect for cleanliness.

If the above cleaning procedures have not rendered the element clean enough for service, the element must be taken out of service and subjected to an advanced cleaning.

5.3 Advanced Cleaning

Advanced cleaning will be conducted at a minimum of every 12 months, or whenever personal protective equipment is soiled to the extent that soil cannot be sufficiently removed by routine cleaning. Advanced cleaning is a thorough cleaning that requires personal protective equipment to be taken out of service. Advanced cleaning would typically be required after every working fire that the member was exposed to.

Advanced cleaning procedures are based on each protective equipment element's manufacturer's care instructions. Therefore, they must be updated whenever new personal protective equipment is purchased.

The following guidelines should be used by members to determine if personal protective equipment is soiled to the extent that advanced cleaning is necessary:

- Obvious odor that cannot be removed with routine cleaning or indicates contamination (diesel fuel for example)
- Visible soil that cannot be sufficiently removed with routine cleaning.
- Known exposure to hazardous chemicals.
- Known exposure to biohazards.
- At the time of advanced inspection, personal protective equipment has not been subjected to an advanced cleaning in the preceding 12 months.

Each firefighter in the Abington Township Fire Department should be trained to perform advanced cleaning. All PPE is required to undergo advanced cleaning on at least an annual basis, unless, during the course of duty, elements become soiled to the extent that an advanced cleaning is necessary more often. Members who are issued personal protective equipment that is not scheduled for advanced inspection, but meet criteria set out in the guidelines for advanced cleaning, must take the appropriate steps to perform the advanced cleaning. Typically, spare PPE gear is available at each station while the member's primary PPE is out of service for advanced cleaning.

When performing advanced cleaning, the member will record:

- Date(s) and findings of advanced inspections
- Dates(s) and findings of advanced cleaning or decontamination
- Reason for advanced cleaning or decontamination
- Date(s) of basic repair(s) and description of repair(s)
- Date(s) of advanced and moisture barrier repair(s), contractor that performed repair(s) and description of repair.

The following procedures must be used for advanced cleaning of protective coats and pants:

Prepare washer-extractor if previous use has been for something other than personal protective equipment.

- Run empty machine through a complete laundry cycle with detergent on hot water temperature setting.

Prepare garments for laundering.

- Protective gloves and safety glasses must be worn.
- Remove all items from pockets.
- Separate the liner from the shell and turn the liner inside out.
- Hoods may be washed with coat and pant liners.
- Remove the DRD from the coat.
- Pre-treat heavily soiled areas or spots with the appropriate cleaning product.
- Do not use chlorine bleach.
- Secure all closures, pocket flaps, collars, hardware, etc.
- Place DRDs into mesh bag
- Create wash loads of like components. For example, all shells or all liners

Load washer-extractor with wash load created from like components.

- The wash load must not exceed the weight capacity of machine.
- Select appropriate wash cycle from the program guide posted on washer-extractor door.
- Add the appropriate cleaning product/detergent into the detergent compartment.
- Do not exceed the level of measurement recommended by detergent guide posted on washer extractor door.

After the wash cycle has completed, remove garments for drying.

- Air dry by hanging or placing in the PPE dryer if the station is equipped with one.
- Do not dry in the sun.

The following procedures must be used for advanced cleaning of helmets:

Prepare helmet for cleaning.

- Protective gloves and safety glasses must be worn.
- Disassemble helmet components.

To clean the helmet shell

- Fill utility sink or 5-gallon bucket with warm water and the appropriate cleaning product
- Use a sponge to wipe off contaminants and soil from helmet shell.
- Rinse with clean water
- Dry shell with soft towel or air dry at room temperature

To clean helmet components

- Fill utility sink or 5-gallon bucket with warm water and the appropriate cleaning product
- Immerse brow pad, ratchet pad and ear covers into sink and hand wash
- Rinse with clean water
- Air dry by hanging.
- Do not dry in the sun.

To clean helmet eye protection system

- Fill utility sink or 5-gallon bucket with warm water and the appropriate cleaning product
- Immerse faceshield and clean with sponge.
- Rinse with clean water
- Dry with soft towel

The following procedures must be used for advanced cleaning of gloves:

- Do not machine wash.
- Fill utility sink or 5-gallon bucket with warm water and the appropriate cleaning product
- Gently scrub gloves with a soft bristle brush
- Rinse with clean water
- Air dry by hanging or placing in the PPE dryer if one is available.
- Do not dry in the sun.

The following procedure must be used for advanced cleaning of boots:

- Do not machine wash.
- Fill utility sink or 5-gallon bucket with warm water and the appropriate cleaning product
- Gently scrub boots with a soft bristle brush
- Rinse with clean water
- Dry with soft towel or air dry at room temperature
- Do not dry in the sun.

5.4 Decontamination

Decontamination is a specialized cleaning of personal protective equipment that is known or suspected to be contaminated with hazardous materials. Personal protective equipment will be evaluated on the scene to assess the extent of contamination. If the PPE needs to be isolated, they will be tagged and bagged on scene and sent to the third-party contractor for decontamination.

Personal protective equipment contaminated by CBRN terrorism agents must be immediately retired upon confirmed exposure.

6.0 Repairs

6.1 General Information

The purpose of repair is to correct damage to ensure that personal protective equipment performs at a serviceable level. Unrepaired damage can make them unsafe for use or eventually result in making them unsafe for use.

6.2 Repairs for Protective Coats and Pants

Advanced repairs of protective coats and pants, and repairs that exceed the proficiency of the fire department's trained personnel, must only be performed by the original element manufacturer or a Verified Independent Service Provider (ISP).

Each fire company of the Abington Township Fire Department is responsible for contracting with a third-party Verified ISP, for the provision of protective coat and pants advanced repair. When it is determined through advanced inspection that a protective coat and/or pants requires advanced repair, the damaged element will remain out of service until repairs have been performed. The Contractor will notify the fire company that the damaged element will remain out of service.

The fire company will remove the damaged element that is out of service, and the affected member must use backup gear until the repaired element(s) is available for use.

The fire company will record upon sending to the contractor for repair:

- Date(s) sent, and contractor used for services.
- Reason for services

The third-party Contractor will be responsible for records pertaining to the services they provide. These include:

- Date(s) and findings of advanced inspections
- Dates(s) and findings of advanced cleaning or decontamination
- Date(s) of repair(s) and description of repair(s)

Upon return of any repaired ensemble or ensemble element, members must perform a routine inspection (reference Section 4.2). If damage has not been repaired or the repair has not been done to an acceptable level, the company Fire Chief must be notified.

7.0 Storage

7.1 General Information

Proper storage of personal protective equipment extends its life, maintains its performance and reduces potential health risks. Improper storage can result in damage to the ensemble or ensemble element and

can compromise the member's safety. Certain conditions can result in deterioration of performance of the ensemble or element or create potential health hazards.

Ultraviolet (UV) light is a known cause of personal protective equipment degradation. Personal protective equipment must never be stored in direct sunlight. They should be stored to minimize exposure to all sources of UV light, including fluorescent light and other UV sources.

Storage of wet or moist personal protective equipment promotes the growth of mildew and bacteria, which can lead to skin irritation or more serious medical conditions and affect the strength of some materials.

Storage in extreme temperatures for prolonged periods of time will accelerate deterioration of ensemble and elements.

Soiled personal protective equipment can present a health risk to individuals who come into contact with it. Therefore, they should not be stored in personal living quarters and passenger compartments of vehicles. Furthermore, to prevent the spread of disease and cross contamination, soiled personal protective equipment should be segregated from other items of equipment and laundry.

Storage or transporting in compartments or trunks with sharp objects, tools or other equipment could damage ensembles and ensemble elements.

Storage in contact with hydraulic fluids, solvents, hydrocarbons, hydrocarbon vapors or other contaminants can cause material degradation, transfer toxins to individuals and reduce FR properties of personal protective equipment.

7.2 Storage – On Duty

While members are on duty, personal protective equipment that is not being worn must not be placed in direct or indirect sunlight.

Each fire station has a designated area for staging personal protective equipment for use. This area meets the conditions for proper storage. Therefore, it must be utilized by on duty members when personal protective equipment is not being worn.

If personal protective equipment must be transported in a trunk or vehicle with other equipment, it must be placed in a gear bag to avoid damage.

7.3 Storage – Off Duty

While members are off duty, personal protective equipment must not be stored in direct or indirect sunlight, the trunks or other compartments of personal vehicles or taken to a personal residence.

Each member has an assigned Turnout Gear rack that meets the conditions for proper storage for storing personal protective equipment while off duty. Clean, dry ensembles and ensemble elements must be placed in the provided storage area before going off duty.

8.0 Retirement

8.1 General Information

The Abington Township Fire Department has specific criteria for the permanent removal of personal protective equipment from operational use. Personal protective equipment that is removed from service because it is no longer suitable for primary personal protection will be destroyed or marked and allocated to non-live fire training, dependent on reason for retirement.

8.2 Criteria for Retirement

- Physical damage that cannot be repaired
- Physical damage that cannot be economically repaired
- Physical damage arising from exposure to excessive heat beyond the conditions which personal protective equipment were designed to withstand.
- Contaminated to the extent that it cannot be safely decontaminated.
- Contaminated to the extent that it cannot be economically decontaminated.
- Significant change in department specification
- Does not meet past or current NFPA standards.

Mandatory retirement due to age of personal protective equipment

- Ten years from date of manufacture

8.3 Retirement and Disposition

The decision to retire personal protective equipment is typically based on the evaluation result of advanced inspection. Advanced inspections will be conducted at a minimum of every 12 months or whenever routine inspections indicate that a problem exists. Advanced inspections may also be initiated after an incident where exposure to excessive heat, severe contamination or other extreme conditions could have compromised the personal protective equipment's protective performance.

Personal protective equipment that has been retired for reasons other than damage or contamination, and remains in serviceable condition, will be tagged for training, permanently marked "for training use only".

9.0 Special Incident Procedure

9.1 General Information

The Abington Township Fire Department has procedures for the handling and custody of personal protective equipment that was worn by members who were victims at incidents where serious injuries or fatalities to the members occurred. This procedure is limited to the actions related to elements of personal protective equipment only.

9.2 Custody of Personal Protective Equipment

Personal protective equipment used during the incident by the injured or deceased member will be immediately removed from service by the Fire Chief of that member's Fire Company.

The Fire Chief will tag removed personal protective equipment with Confiscated Labels and place into cardboard boxes that are reserved for this use. Do not place elements into plastic bags before storing. Boxes must be labeled with date of incident, description of incident, affected member's name and employee number and contents. The equipment will be preserved for any investigatory purposes required by Law Enforcement and/or the Fire Marshal's Office.

10.0 RECORDS

Documentation. All records generated in accordance with this policy shall be retained in company files and within the record of the individual member(s) as indicated above.