



Bristol Fire Department Standard Operating Procedures

Care and Maintenance of Protective Gear

February 2022

Bristol Fire Department
Standard Operating Procedures

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Town of Bristol Fire Department Standard Operating Procedures		
SECTION 1-01	Selection, Care and Maintenance of Protective Gear Program	REVISION 02-28-22 NEXT REVISION DATE 02-28-23

Purpose: The purpose of these Standard Operating Procedures is to establish a program for firefighting protective jackets, 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.

Scope: All protective gear including; jackets, pants, hoods, helmets, gloves, and boots. This document complies with *NFPA 1851 Standard on Selection, Care and Maintenance of Protective Ensembles for Structural Fire Fighting and Proximity Fire Fighting, 2020 Edition*.

Responsibility: The program coordinator is responsible for the maintenance, care and record keeping of the protective gear owned by the Bristol Fire Department.

Program Parts

The program consists of the following parts:

- Inspection for soiling, contamination and damage
- Cleaning and decontamination
- Out-sourced repairs
- Storage
- Retirement

The Bristol Fire Department will outsource parts of the program. Minerva Bunker Gear Cleaners and Lion Total Care will provide:

- Decontamination (reference Section 1-03)
- All Repairs (reference Section 1-04)

1. Records

Records will be kept for all structural firefighting protective clothing in use. This includes all protective jackets, pants, hoods, helmets, gloves, and boots assigned to fire department personnel, as well as items available for temporary replacement of issued gear.

At time of issue, the Program Coordinator will record the following information into the PS TRAX Station Equipment & Inventory system:

- 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 Program Coordinator will record the following information upon sending to Minerva Bunker Gear Cleaners or Lion Total Care in the PS TRAX Station Equipment & Inventory system:

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

Minerva Bunker Gear Cleaners or Lion Total Care 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
- Dates(s) of repair(s) and description of repair(s)
- Date of retirement recommendation
- Date of fire department approval
- Date sent back to the department
- Date and method of disposal

After items have reached end of their useful life per criteria established in this document (reference Section 1-06), the Program Coordinator will record into the PS TRAX Station Equipment & Inventory system.

- Date of retirement
- Date and method of disposal

All records will be kept for at least 12 months after the item has been retired.

2. Manufacturer's Instructions

Manufacture Care and Use Manuals are attached to all new NFPA 1971, 2007 Edition structural firefighting protective clothing. When issuing new protective clothing, the Program Coordinator will provide the firefighter to whom they have been issued with the Care and Use Manual.

- It is the responsibility of the firefighter to read Manufacture 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 the fire station.

3. Protecting the Public and Personnel from Contamination

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

Structural firefighting protective clothing must not be worn or stored in any type of living quarters, residence, or any other place where cross contamination could occur.

Structural firefighting protective clothing must not be washed at home or washed in public laundries.

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

Only clean structural firefighting protective clothing shall be used during tours, demonstrations and displays.

4. Reporting Personal Protective Clothing Health and Safety Concerns

Firefighters must report any issues with their assigned personal protective clothing to their Company Officer. The Company Officer will then notify the Program Coordinator who will address the issue.

Town of Bristol Fire Department Standard Operating Procedures		
SECTION 1-02	Selection, Care and Maintenance of Protective Gear Inspection	REVISION 02-28-22 NEXT REVISION DATE 02-28-2023

Purpose: The purpose of inspection is to determine whether personal protective clothing has soiling, contamination or damage that makes it unsafe for use or could eventually result in making it unsafe for use. If personal protective clothing is found to be soiled or contaminated, it must be cleaned or decontaminated before further inspection.

Scope: All protective gear including; jackets, pants, hoods, helmets, gloves, and boots. This document complies with *NFPA 1851 Standard on Selection, Care and Maintenance of Protective Ensembles for Structural Fire Fighting and Proximity Fire Fighting, 2020 Edition*.

Responsibility: Routine inspection is the responsibility of Bristol Fire Department personnel who have been issued personal protective clothing. Routine inspection must be performed after each use and after each exposure to an event that could result in damage. Performing a brief inspection monthly is recommended.

Procedure:

Routine Inspection

Protective coats and pants must be inspected for the following:

- Soiling
- Contamination
- Physical damage
 - Rips, tears and cuts
 - Damaged or missing hardware
 - 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)
- Loss of moisture barrier integrity
 - Rips, tears, cuts or abrasions
 - Discoloration
 - Thermal damage
- Evaluation of system fit and coat/pants overlap

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 Defender Shield or Goggles
- Damaged or missing reflective trim

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

Personnel who suspect that a problem exists should inform their Company Officer. The Company Officer will then notify the Program Coordinator to request advanced inspection.

Advanced Inspection

Advanced inspections will be conducted at a minimum of every 12 months, or whenever routine inspections indicate that a problem exists.

The Bristol Fire Department Program Coordinator and his/her designee(s) will perform the advanced inspection, as outlined in PS TRAX, of each set of personal protective clothing once annually or as needed. If the Program Coordinator determine repairs are needed to protective clothing they will utilize either Minerva Bunker Gear Cleaners or Lion Total Care for this provision. Each member of the Bristol Fire Department who has been issued personal protective clothing or ensemble elements will be notified of the date that the ensemble or ensemble elements must be:

- Made available for pickup
- Made available for inspection

All personnel must submit all ensemble and ensemble elements issued to them for advanced inspection.

SECTION 1-03	Selection, Care and Maintenance of Protective Gear Cleaning & Decontamination	REVISION 02-28-22 NEXT REVISION DATE 02-28-223
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Purpose: The purpose of cleaning is to remove substances that could affect the performance of ensembles or personal protective clothing and to remove substances that are potentially hazardous to the user.

Responsibility: Routine cleaning is the responsibility of each individual of the Bristol Fire Department who has been issued personal protective clothing. It is a light cleaning performed by the firefighter without the elements being taken out of service.

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

Personal protective clothing 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
- Gently brush with a soft bristle brush when necessary and rinse again

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.

Policy: Advanced cleaning will be conducted at a minimum of every 12 months, or whenever personal protective clothing is soiled to the extent that soil cannot be sufficiently removed by routine cleaning. Advanced cleaning is a thorough cleaning that requires personal protective clothing to be taken out of service.

Bristol Fire Department personnel that have been trained on how to perform advanced cleaning may perform an advanced cleaning if the below criteria are met. Advanced cleaning procedures are based on each protective clothing element’s manufacturer’s care instructions.

The following guidelines should be used by personnel to determine if personal protective clothing 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 bio-hazards
- At the time of advanced inspection, personal protective clothing has not been subjected to an advanced cleaning in the preceding 12 months.

Procedures:

advanced cleaning of protective jackets, pants, gloves, and hoods:

Prepare garments for laundering:

- Protective gloves must be worn
- Remove all items from pockets
- Separate the liner from the shell
- Remove the DRD from the coat
- Pre-treat heavily soiled areas or spots with the recommended cleaning product
 - Do not use chlorine bleach
- Secure all closures, pocket flaps, collars, hardware, etc.

Load washer-extractor with wash load

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

After wash cycle has completed, remove garments for drying

- Air dry by hanging on z racks placed in apparatus bay
 - 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 with warm water and approved cleaning product
 - Use 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 with warm water and approved cleaning product
 - Immerse brow pad, ratchet pad and ear cover into sink and hand wash
 - Rinse with clean water
 - Air dry by hanging in designated location
 - Do not dry in the sun

To clean defender shield or goggles:

- Fill utility sink with warm water and approved cleaning product
 - Immerse defender shield or goggles and clean with sponge
 - Rinse with clean water

- Dry with soft towel

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

- Do not machine wash
- Fill utility sink with warm water and approved 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

Decontamination

Decontamination is a specialized cleaning of personal protective clothing that is known or suspected to be contaminated with hazardous materials. Personal protective clothing will be evaluated on the scene by the Safety Officer or the IC to assess extent of contamination. The Safety Officer or IC will determine whether the elements need to be isolated, tagged and bagged on scene and sent to Minerva Bunker Gear Cleaners or Lion Total Care for decontamination.

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

SECTION 1-04	Selection, Care and Maintenance of Protective Gear Repairs	REVISION 02-28-22 NEXT REVISION DATE 02-28-23
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Purpose: The purpose of repair is to correct damage to ensure that personal protective clothing performs at a serviceable level. Unrepaired damage can make them unsafe for use or eventually result in making them unsafe for use.

Responsibility: It is the responsibility of each individual of the Bristol Fire Department who has been issued personal protective clothing to notify their company officer if their gear has been damaged.

Procedure:

Personnel who suspect that a problem exists should inform their Company Officer. The Company Officer shall then notify the Program Coordinator to request an advanced inspection.

If the Program Coordinator determine repairs are needed to protective clothing, they will utilize either Minerva Bunker Gear Cleaners or Lion Total Care for this provision.

The Program Coordinator will notify the firefighter that the damaged element is out of service. The Program Coordinator will then issue a replacement element until the element(s) have been repaired and returned.

Town of Bristol Fire Department Standard Operating Procedures		
SECTION 1-05	Selection, Care and Maintenance of Protective Gear Storage	REVISION 02-28-22 NEXT REVISION DATE 02-28-23

Purpose: Proper storage of personal protective clothing 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.

Responsibility: It is the responsibility of each individual of the Bristol Fire Department who has been issued personal protective clothing to properly store their gear, so it is not damaged.

Procedure:

Ultraviolet (UV) light is a known cause of personal protective clothing degradation. Personal protective clothing 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 clothing 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 clothing 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 clothing should be segregated from other items of clothing 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 fire resistive properties of personal protective clothing.

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

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

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

SECTION 1-06	Selection, Care and Maintenance of Protective Gear Retirement	REVISION 02-28-22 NEXT REVISION DATE 02-28-23
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Purpose: The Bristol Fire Department has specific criteria for the permanent removal of personal protective clothing from operational use. Personal protective clothing 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.

Responsibility: It is the responsibility of the program coordinator to alert individuals that their gear needs to be retired. The program coordinator will also be responsible for providing replacement gear.

Procedure:

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 clothing 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 clothing
- Ten years from date of manufacture

The decision to retire personal protective clothing 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 clothing's protective performance.

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