



# Burlington Fire Department



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<b>Section: 03 - Safety</b>	
<b>SOG Number: 03.02</b>	<b>Effective Date: 12/20/2017</b>
<b>Subject: Protective Clothing Inspection and Maintenance</b>	
<b>By Order of Fire Chief Steven A. Locke</b>	

## **I. Purpose:**

To provide guidelines and procedures for the storage, inspection, cleaning and repair / replacement of structural personal protective clothing.

## **II. Scope:**

This standard operating guideline shall apply to all uniformed members of the Burlington Fire Department.

## **III. Definitions:**

- Firehouse – Data management system used by the Department.
- Fire Wash™ – Gear wash dispensing system available with the gear washers at Stations 1, 2 & 4.
- PPE – Structural Firefighting Personal Protective Equipment.
- PPE Maintenance Manager – Captain assigned to Fire Station #4.

## **IV. Guidelines:**

### A). Storage of Equipment.

1. All personal protective equipment shall be stored in a neat, orderly fashion.
2. Equipment shall be dried completely before storage to prevent mold or dry rot.
3. Equipment shall be stored in an area with minimal ultra violet light. UV light breaks down the fibers of Nomex and PBI material.

4. Equipment stored in the passenger compartment of any department or personal vehicle must be cleaned after any smoke exposure as to reduce the exposure to carcinogens or other potential cancer causing properties.

B). Cleaning and Laundry Instructions.

1. All protective clothing shall be properly cleaned and dried after use to prevent the build-up of contaminants. Contaminants such as carbon penetrate the fibers of Nomex and PBI. This may reduce the flame retardant characteristics of the materials and off-gas cancer causing carcinogens. All protective clothing must be washed at a minimum semi-annually. All laundering of PPE must be properly documented in Firehouse.
2. **Helmets.** Helmet outer shells shall be cleaned with an all-purpose cleaner such as “Simple Green” to remove tar, carbon and smoke residue. The inner suspension system shall be cleaned with a liquid detergent or clothes washing detergent (Tide®). The helmet liner shall be thoroughly dried before storing.
3. **Hoods and Gloves.** Hoods shall be washed after every incident where smoke and fumes are present. Hoods may be washed in the extractor washing machine located at Stations 1, 2 and 4 or hand washed with clothes washing detergent (Tide®). Gloves will be hand washed with clothes washing detergent (Tide®), rinsed, and allowed to air dry.
4. **Coats and Pants.** Turnout coats and pants shall be washed in the extractor at Stations 1, 2 or 4 following the instructions posted with the machines (Appendix B).
  - a. Preparation of Structural PPE for Washing/Extracting.
    - (1) Hose or bush off all gross contamination.
    - (2) Ensure all pockets are emptied.
    - (3) Separate thermal liner/moisture barrier from outer shell.
    - (4) Turn thermal liner/moisture barrier inside out.
    - (5) Secure hook and loop (Velcro®) upon itself where applicable.
    - (6) Remove Drag Rescue Device (DRD) and store in safe location.
    - (7) Fasten all closures on outer shell.

- (a) Snap all snaps.
- (b) Secure all hook and loop closures, including pockets and collars.
- (c) Fasten hook and Dee closures.
- (8) **Do not wash outer shells and liners together in the same load.**
- (9) Gloves, Drag Rescue Devices and suspenders should be hand washed separately as necessary.

b. Gear Washer/Extractor instructions – Structural Personal Protective Equipment Instructions.

- (1) Turn on power button.
- (2) Load the machine (not more than four [4] pieces per load).
  - (a) Wash like materials together (liners and outer shells separately).
  - (b) Wash hoods with liners.
  - (c) Gloves, Drag Rescue Devices and suspenders should be hand washed.
- (3) Close the machine door.
- (4) Ensure the machine display reads “Pr – 1” (For the extractors at Station Two and Four).
- (5) Press start button on machine.
- (6) Press cycle advance for the machine at Station One.
- (7) Press red button ONLY ONCE on the grey box for the Fire Wash™.
- (8) Do not use Fire Wash™ for laundry other than fire gear.
- (9) Other laundry should be washed with regular laundry soap.

c. Gear Washer/Extractor Instructions – Laundry to be Decontaminated.

- (1) Turn on power button.
- (2) Load washer using Standard Precautions and appropriate protective barriers to reduce the risk of cross contamination.
- (3) Close machine door.
- (4) Ensure the machine display reads “Pr-2” (For the extractors at Station Two and Four).
- (5) On top of machine, locate the detergent dispensing compartment.
- (6) Add ¼ scoop of dry detergent to compartment 1 – Prewash.
- (7) Add ½ scoop of dry detergent to compartment 2 – Main wash.
- (8) Add 1 ounce of Defensive Fabric Sanitizer to compartment 3.
- (9) Press start button on the machine.
- (10) Press cycle advance for the machine at Station One.

- d. Pants and coats shall be dried on the station's gear drying racks. Pants and coats will never be dried in station clothes driers.
- e. **The use of any detergent containing bleach is strictly prohibited, as the use of bleach will destroy the Nomex and PBI fibers. Fire gear will be washed using the FIRE WASH™ dispensing system. If the FIREWASH™ system is OOS, please use TIDE® laundry detergent.**

C). Inspection of Protective Clothing.

- 1. A full inspection must be performed annually on all PPE to assure it is in proper working order and it properly fits the user. Annual inspection of primary sets of PPE will occur within the month of October. Secondary sets of PPE will be inspected in the month of April. Reminder of the annual inspection will be forwarded by the PPE Maintenance Manager. The Burlington Fire Department Personal Protective Ensemble Inspection Report (Appendix A) shall be used to document the inspection of turnout gear.

\*Note: As of October of 2017 some Lion™ PPE comes with a turnout gear maintenance plan. Guidance on the inspection of this PPE will be managed by the PPE Maintenance Manager according to the conditions of the plan.

- 2. All inspections of turnout coats and pants shall be documented in Firehouse. The printed copy of the report shall be forwarded to the PPE maintenance manager.
- 3. Deficiencies found, see section D of this document.

B. Repairs of Protective Clothing.

- 1. Any rips, burn holes, or other deficiencies to protective clothing shall be immediately reported to your company officer.
- 2. Bunker coats and pants will be laundered, tagged out of service with the issue noted and placed in the gear "Out for repair" box at Central. The PPE maintenance manager will make all necessary arrangements to have the protective clothing repaired or replaced.

3. All issues / repairs shall be documented in Firehouse.

C. Replacement of Personal Protective Equipment.

1. Equipment that requires replacement will be received from Fire Station 4.

i. Equipment available:

- 1) Bunker coats
- 2) Bunker pants
- 3) Bunker boots
- 4) Firefighting helmet
- 5) Firefighting hood
- 6) Firefighting gloves
- 7) Work gloves
- 8) Passport helmet shield
- 9) Suspenders
- 10) Helmet repair parts.

2. Contact the Station 4 company officer on your shift for equipment replacement.

i. If what you request is not immediately available, it will be ordered by the PPE maintenance manager.

**V. Responsibility:**

It is the responsibility of all members to read, understand and follow this Standard Operating Guideline

Revision History			
Revision Date	Section	Summary	Principal Author
Update of prior SOG 3.1.2 & 3.1.3 to reflect current industry best practices.	TBD	TBD	Capt. LaChance



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## APPENDIX A

### Personal Protective Ensemble Inspection Report

Reference NFPA 1851 Chapter 6

**Name:** Enter Name Here                      **Issue #:** Enter issue #  
**Rank:** Select Rank                              **Assignment:** Select assignment  
**Date:** Select Date

**Inspecting Officer:** Name of Inspecting Officer

**CLOTHING HAS BEEN LAUNDERED & IS CLEAN**                      Yes  No

#### 1. Coat:

**Make & Model:** Enter make and model of coat  
**Manufactured Date:** Enter manufactured date                      **Size:** Enter coat size.  
**Serial Number:** Enter serial number

<b>Inspected for:</b>	<b>Acceptable</b>	<b>Repair Needed</b>
a. Damaged or missing hardware	<input type="checkbox"/>	<input type="checkbox"/>
b. Damage to outer shell stitching	<input type="checkbox"/>	<input type="checkbox"/>
c. Holes or rips in outer shell	<input type="checkbox"/>	<input type="checkbox"/>
d. Damage to inner liner stitching	<input type="checkbox"/>	<input type="checkbox"/>
e. Holes or rips to inner liner	<input type="checkbox"/>	<input type="checkbox"/>
f. Frayed or worn collar	<input type="checkbox"/>	<input type="checkbox"/>
g. Reflective stripes damaged or missing	<input type="checkbox"/>	<input type="checkbox"/>
h. Color change or breakdown of fabric	<input type="checkbox"/>	<input type="checkbox"/>
i. Matching serial numbers (shell/liner)	<input type="checkbox"/>	<input type="checkbox"/>
j. Labeled with name and issue number	<input type="checkbox"/>	<input type="checkbox"/>
k. Correct assembly of outer shell, liner, DRD.	<input type="checkbox"/>	<input type="checkbox"/>

#### 2. Pants:

**Make & Model:** Enter make & model of pants  
**Manufactured Date:** Enter manufactured date                      **Size:** Enter pant size  
**Serial Number:** Enter pant serial number

<b>Inspected for:</b>	<b>Acceptable</b>	<b>Repair Needed</b>
a. Damaged hardware or Velcro	<input type="checkbox"/>	<input type="checkbox"/>
b. Damage to outer shell stitching	<input type="checkbox"/>	<input type="checkbox"/>
c. Holes or rips in outer shell	<input type="checkbox"/>	<input type="checkbox"/>
d. Damage to inner liner stitching	<input type="checkbox"/>	<input type="checkbox"/>
e. Holes or rips in inner liner	<input type="checkbox"/>	<input type="checkbox"/>
f. Damage to pant cuffs	<input type="checkbox"/>	<input type="checkbox"/>
g. Reflective striping damaged or missing	<input type="checkbox"/>	<input type="checkbox"/>
h. Color change or breakdown of fabric	<input type="checkbox"/>	<input type="checkbox"/>
i. Stretched or damaged suspenders	<input type="checkbox"/>	<input type="checkbox"/>
j. Matching serial numbers shell & liner	<input type="checkbox"/>	<input type="checkbox"/>
k. Labeled with name and issue number	<input type="checkbox"/>	<input type="checkbox"/>
l. Correct assembly of outer shell and liner	<input type="checkbox"/>	<input type="checkbox"/>

### **3. Helmet:**

<b>Inspected for:</b>	<b>Acceptable</b>	<b>Repair Needed</b>
a. Missing fasteners or eye shields	<input type="checkbox"/>	<input type="checkbox"/>
b. Damage to outer shell	<input type="checkbox"/>	<input type="checkbox"/>
c. Missing reflectivity	<input type="checkbox"/>	<input type="checkbox"/>
d. Inner liner or ear flaps damaged or missing	<input type="checkbox"/>	<input type="checkbox"/>
e. Suspension damaged or missing	<input type="checkbox"/>	<input type="checkbox"/>
f. Chin strap damaged or missing	<input type="checkbox"/>	<input type="checkbox"/>
g. Soiling or contamination	<input type="checkbox"/>	<input type="checkbox"/>
h. Presence of impact cap	<input type="checkbox"/>	<input type="checkbox"/>
i. Labeled with name and issue number	<input type="checkbox"/>	<input type="checkbox"/>
j. Proper company shield (Ref. DD 15-29)	<input type="checkbox"/>	<input type="checkbox"/>

### **4. Boots:**

<b>Inspected for:</b>	<b>Acceptable</b>	<b>Repair Needed</b>
a. Cracking, cuts or tears in rubber or leather	<input type="checkbox"/>	<input type="checkbox"/>
b. Sole or tread wear, condition	<input type="checkbox"/>	<input type="checkbox"/>
c. Worn or broken stitching	<input type="checkbox"/>	<input type="checkbox"/>
d. Loss of water resistance	<input type="checkbox"/>	<input type="checkbox"/>
e. Damaged steel toe, midsole, or shank	<input type="checkbox"/>	<input type="checkbox"/>
f. Condition of lining	<input type="checkbox"/>	<input type="checkbox"/>
g. Soiling or contamination	<input type="checkbox"/>	<input type="checkbox"/>
h. Labeled with name and issue number	<input type="checkbox"/>	<input type="checkbox"/>

**Gloves:**

<b>Inspected for:</b>	<b>Acceptable</b>	<b>Repair Needed</b>
a. Cuts or tears	<input type="checkbox"/>	<input type="checkbox"/>
b. Worn stitching	<input type="checkbox"/>	<input type="checkbox"/>
c. Stiffness or rigidity	<input type="checkbox"/>	<input type="checkbox"/>
d. Insulation worn or torn	<input type="checkbox"/>	<input type="checkbox"/>
e. Loss of elasticity in cuff	<input type="checkbox"/>	<input type="checkbox"/>
f. Shrinkage	<input type="checkbox"/>	<input type="checkbox"/>
g. Inverted liner	<input type="checkbox"/>	<input type="checkbox"/>
h. Soiling or contamination	<input type="checkbox"/>	<input type="checkbox"/>
i. Labeled with name and issue number	<input type="checkbox"/>	<input type="checkbox"/>

**5. Hood:**

<b>Inspected for:</b>	<b>Acceptable</b>	<b>Repair Needed</b>
a. Holes or rips in fabric	<input type="checkbox"/>	<input type="checkbox"/>
b. Damaged stitching	<input type="checkbox"/>	<input type="checkbox"/>
c. Loss of elasticity	<input type="checkbox"/>	<input type="checkbox"/>
d. Thermal damage	<input type="checkbox"/>	<input type="checkbox"/>
e. Soiling or contamination	<input type="checkbox"/>	<input type="checkbox"/>

**6. Deficiencies forwarded to PPE Maintenance Manager: Yes  No**

**7. Results of inspection entered into Firehouse: Yes  No**

**Notes:**

Enter notes here and reference applicable section of the inspection form. For example, if gloves are found to be too rigid, this would be documented here with a reference being made to section 5c of the inspection form.






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## Appendix B

### Preparing Gear for Washing / Extracting

- Hose or brush off all gross contamination.
- Ensure ALL pockets are emptied.
- Separate Thermal (TL) / Moisture Barrier (MB) from Outer Shell (OS).
- Turn TL / MB inside out.
- Secure Velcro® between TL and MB at the collar.
- Remove drag rescue device (DRD) if present.
- Fasten all closures on OS.
  - Snap all snaps.
  - Secure all Velcro® (including collars and pockets).
  - Fasten all “Hooks and D’s”
- **DO NOT wash Outer Shells and liners together.**
- Gloves, DRD’s and suspenders should be hand washed separately if necessary.

### Gear Washer / Extractor Instructions

- Turn on power button.
- Load the machine (not more than 4 pieces).
  - Make sure to wash like materials together (liners and outer shells separately).
  - Wash hoods with liners.
  - Gloves, DRD’s and Suspenders should be hand washed.

- Close machine door.
- Ensure screen reads Pr – 1 (Station 2 and 4).
- Press start button on the machine (Station 2 and 4).
- Press cycle advance (Station 1).
- Press red button ONLY ONCE on grey box for Fire Wash™.

**DO NOT USE FIRE WASH™ FOR LAUNDRY OTHER THAN  
FIRE GEAR.**

**ALL OTHER LAUNDRY SHOULD BE WASHED WITH  
REGULAR LAUNDRY SOAP.**

### **LAUNDRY DECONTAMINATION**

- Turn on power button.
- Load washer using proper PPE to reduce the risk of cross contamination.
- Close machine door.
- Ensure screen reads Pr – 2 (Station 2 and 4).
- On top of machine, locate the detergent dispensing compartment.
- Add 1/4 scoop of dry detergent to compartment 1 (prewash).
- Add 1/2 scoop of dry detergent to compartment 2 (main wash).
- Add 1 oz. of Defensive Fabric Sanitizer to compartment 3.
- Press start button on the machine (Station 2 and 4).
- Press cycle advance (Station 1).