

Routine Cleaning and Inspection Procedures Required of ALL Responders After EVERY Soiling/Use

NFPA 1851, Standard on Selection, Care, and Maintenance of Protective Ensembles for Structural Fire Fighting and Proximity Fire Fighting, effective date, June 24, 2007 requires Fire Departments to have a comprehensive program for PPE.

In part, this Standard was developed to address the evolving studies suggesting that firefighters have higher levels of certain cancers and illnesses than the general population. Other studies have shown various particulate toxins can accumulate on your PPE after emergency use, typically from by-products of combustion. Potential health hazards of those particulates can be minimized with simple procedures, and well cared for/ repaired PPE. You want to keep the toxins away from your body with well maintained PPE, and you want to remove the toxins ASAP after the emergency event. The first line of defense starts with YOU and the routine cleaning and inspection required of you after every use and/or soiling of your PPE by the NFPA 1851 Standard. Your routine cleaning and inspections will be supplemented by the Department with more advanced periodic cleanings, inspections, and repairs to ensure maximal continued protection. This overview is intended for frequent reference by the line firefighter doing routine cleaning and inspection. We have deleted all information that is not needed by the line firefighter. Information on advanced procedures is provided in our training classes for clothing program management.

What do I need to Routine Clean and Routine Inspect?

Turnout Coats, Bunker Pants, Helmets, Gloves, Fire Boots, and Hoods are the main elements of your PPE that you are required to routinely clean and inspect after every use and/or soiling. NFPA 1851 applies to all these elements certified to NFPA 1971, 2007 or earlier editions of NFPA

PPE Standards. (New and old gear is covered by NFPA 1851 requirements).

CLEANING

Routine Cleaning: A light cleaning of PPE performed by the end user without taking the elements out of service and performed after each use **(PPE contaminated by CBRN terrorism agents shall be immediately retired after confirmed exposure and shall not be subjected to cleaning or decontamination. If you have concerns that your PPE may have been exposed to any such agents, DO NOT USE IT, BAG IT, and contact the individuals within your organization managing your PPE for instructions.**

Steps for Routine Cleaning

- Where practical, contamination levels shall be evaluated and cleaning initiated at the emergency scene. Bringing dirt and toxins into the apparatus and back to the station should be minimized wherever practical.
- Examine manufacturer's label and user information for instructions on cleaning and drying. Manufacturer's instructions supersede NFPA 1851 instructions (per the document).
- DO NOT USE chlorine bleach, chlorinated solvents, active ingredient cleaning agents, or solvents (this includes helmets).
- The manufacturer shall be contacted if stronger cleaning agents are required.
- Ensemble elements and element layers shall be separated whenever possible to prevent cross contamination.
- Any dry debris shall be brushed off.

- Other debris shall be gently rinsed off with water. Heavy scrubbing or spraying with high-velocity water jets, such as a power washer shall not be used.
- Where necessary, Structural (but NOT Proximity) elements for routine cleaning can be cleaned in a utility sink designated for PPE cleaning and decontamination. Many times, if soiling is this severe, the PPE is simply sent for an Advanced Cleaning. However, if your SOP allows, and utility sink routine cleaning is done instead, the following precautions must be followed:
 - For garments, ONLY spot cleaning should be done in a utility sink. If full garment cleaning is needed, refer the garment for an Advanced Cleaning.
 - When spot cleaning garments, separate layers to prevent cross contamination.
 - For helmets, if it is necessary to completely immerse the helmet, separate the impact cap if one is needed in your helmet (all Morning Pride helmets have shells strong enough to not require an impact cap). Each element component shall be washed and dried separately before helmet re-assembly.
 - Proximity gear can NOT be immersed in a utility sink. Contact us more advanced procedures for Proximity gear (other than hose line flushing and gentle sponge wipeoff)
 - Do not overload sink.
 - Heavily soiled or spotted areas shall be pre-treated. Chlorinated bleach, chlorinated solvents, active-ingredient cleaning agents, or solvents shall not be used without the manufacturer's approval.
 - Do not exceed water temperatures of 40°C (105°F).
- Use mild detergents with a pH range of not less than 7.0 pH and not greater than 10.0 pH (this is a Total Fire Group recommendation that narrows the range of 6.0 pH and not greater than 10.5 pH allowed in NFPA 1851) as indicated on the product MSDS, or original product container.
- Protective gloves and eye/splash protection shall be worn.
- Agitate gently, using a gloved hand or stir stick.
- Elements may be lightly scrubbed with soft bristle brush.

Note: NEVER use a brush or any other abrasive cleaning devices when cleaning outer shell and other radiant reflective components of Proximity fire fighting protective ensemble elements. Similarly, use care with moisture barrier assemblies.
- Elements shall be thoroughly rinsed after routine cleaning. We recommend draining water from the sink, refilling with new water and agitating gently with gloved hand or stick. Repeat until the garment is fully rinsed.
- Elements shall be inspected after washing (see routine inspection below) and, where necessary shall be rewashed or submitted for advanced cleaning procedures.
- Rinse out sink after routine cleaning and rinsing is complete.
- The following routine drying procedures shall be followed:
 - Examine manufacturer's label and user information for instructions on cleaning and drying. Manufacturer's instructions supersede NFPA 1851 instructions (per the document). In the absence of manufacturer instructions or manufacturer approval of alternative drying methods, the routine cleaning and drying procedures here shall be utilized.

Refer the PPE element to your PPE manager if any damage is noted during routine inspection or if routine cleaning left the PPE still soiled. If you are unsure whether a PPE element is unfit for service, do not use it and contact your PPE manager for further guidance.



- When air drying, place elements in an area with good ventilation BUT OUT OF DIRECT SUNLIGHT.
- When machine drying...
 - PLEASE consider that routine cleaning may not remove all contaminants. There could be serious issues with machine drying of even slightly dirty products (dryer cross contamination, stain setting, fuel contaminants in gas dryers, etc). For that reason, we recommend that air drying be done whenever practical.
 - Before initiating machine drying, closely examine the garment. If it has a "smoke" smell or if it might even be slightly dirty, DO NOT MACHINE DRY THE PPE.
 - Helmets, gloves and footwear shall not be machine dried using equipment that produces mechanical action from tumbling or agitation.
 - Proximity aluminized garments may NOT be machine dried.
 - If you still wish to machine dry, contact your PPE manager for approval and detailed NFPA 1851 precautions BEFORE any machine drying.
- Hook and loop functionality
- Label integrity and legibility
- Damaged trim
- Damaged closures and hardware
- Leakage indicating potential moisture barrier damage or physical changes in any moisture barrier that might suggest same (browning, discoloration, bubbling, delamination, etc.)
- Interface with other PPE elements for effective overlap
- Proper fit of elements

Hoods

- Loss of elasticity in face opening
- Loss of material elasticity or evidence of stretching out-of-shape
- Broken or missing stitches
- Seam integrity

Helmets

- Shell damage (dents, abrasions, etc.)
- Damaged or missing components
- Damage to ear covers
- Damage to eye face protection (scratches, melting, etc.)

Gloves

- Shrinkage
- Liner inversion
- Loss of flexibility

Footwear

- Loss of water resistance
- Exposed/damaged parts

Drag Rescue Device (DRD)

- Correct installation in garment
- Cuts, tears, punctures, cracking, or splitting
- Thermal damage

INSPECTION

Routine Inspection: Each individual member must conduct a routine inspection of their PPE after each use. Routine inspection typically follows routine cleaning (so problems are more visible), and the procedures include, but are not limited to, inspecting for:

All Elements

- Soiling
- Contamination
- Physical damage to all layers (rips, tears, cuts, abrasions)
- Thermal damage (charring, burn holes, melting, discoloration of any layer)



US® AMERICAN
FIREWEAR



TOTALFIREGROUP®
ADVANCED PERSONAL PROTECTION

Kore Kooler™
REHAB CHAIR
A Morning Pride Product



Interface Components

- Loss or reduction of properties that allow component to continue as effective interface, such as loss of shape or inability to remain attached to the respective element(s)

Proximity Fire Fighting Protective Ensembles

- Loss of radiant reflectivity
- Loss of radiant reflective coating(s) from abrasion

Other Information for Line Firefighters

STORAGE

General Requirements:

- Keep out of direct sunlight when not in use
- Clean and dry before storing
- Store in clean, dry, and well-ventilated area
- Do not store in air-tight container unless new and unused
- Do not store at very high or low temperatures
- Keep soiled gear out of living quarters and away from personal belongings
- Place soiled gear in case to prevent cross contamination
- Store away from contaminants

Proximity Fire Fighting Protective Coat/Trousers:

- Store by hanging garments, and do not fold any aluminized PPE, to limit the damage caused by creasing

RETIREMENT

Retirement Criteria: The process of permanently removing PPE from use in the organization. Retirement is specified when:

1. Structural fire fighting ensembles and ensemble elements have manufacture dates that are more than 10 years old
2. Proximity fire fighting ensembles and ensemble elements have manufacture dates that are more than 10 years old. But it is

required that the aluminized outer shell of Proximity fire fighting gear be replaced at least every 5 years

3. When PPE is so worn, damaged, or contaminated that repairs or cleaning is not possible or cost effective
4. When PPE is contaminated by CBRN terrorism agents following a confirmed exposure (never reuse any PPE that has been contaminated by CBRN terrorism agents)

Contact your PPE program manager if any element of your PPE meets any of the retirement conditions noted above. PPE that is no longer of use for emergency operations but is not contaminated, defective or damaged must be retired but can be used in non-live fire training when appropriately marked for such use

DISPOSAL

Properly dispose of PPE in a manner assuring it will not be used for fire fighting, emergency operations or training. Consult your program manager if you feel any element of your PEE is a candidate for disposal (never dispose of the gear in common refuse yourself).

This guide is ONLY a synopsis of the primary NFPA 1851 requirements for line firefighters. Please refer to NFPA 1851 and its appendices for determining the actual requirements and guidance for selection, care, and maintenance of Structural fire fighting protective ensembles. Total Fire Group's website includes Reference Guide information on NFPA Standard 1851 in detail, as well as available no-charge classes on the Standard and other supports.

This card provided courtesy of the Total Fire Group family of high technology brands (additional, reasonable quantities or other assistance available through Total Fire Group at **1-800-866-6148** or **info@totalfiregroup.com**).