7 steps to cleaner firefighter PPE

Wearing dirty turnout gear is not a badge of honor; many firefighters still take pride in wearing heavily soiled and well-worn personal protective clothing.

Science, however, demonstrates the fallacy of such sentiment. Contaminated turnout gear will off-gas toxic, cancer-causing materials that can be inhaled or absorbed through the skin.

Keeping clothing clean and properly maintained is not only a way to extend the life of the clothing, but also that of the firefighter.

To get it clean, there are seven basic steps to follow.

1. Follow the NFPA and manufacturer's instructions

NFPA 1851 is the applicable standard for departments to follow to ensure minimum procedures for the inspection, cleaning, repair, storage and retirement of the clothing ensemble.

While NFPA has established the standard, the individual protective clothing manufacturers specify the care and maintenance procedures for their products.

Chapter 7 of NFPA 1851 specifies the necessary actions for the cleaning and drying of the ensemble components. It defines three types of cleaning: routine, advanced and specialized.

It is incumbent on officers and firefighters alike to know those specific manufacturer recommendations and to diligently follow them. The individual firefighter bears ultimate responsibility for the proper care and maintenance of their ensemble.

2. Care for your gear from the beginning

Every entry-level firefighter training program typically begins with introducing the future firefighter to their protective ensemble — how to wear it, how to inspect it and how to clean it.

Historically, we've probably spent more time on the first two topics at the expense of the third. We need to change that paradigm.

From the very beginning of their fire service career, firefighters need to develop and maintain the skills and mindset necessary to ensure that their protective clothing is clean and free of potentially harmful contaminants.

3. Do routine cleanings
Routine cleaning is required after any emergency response where soiling has occurred. It involves brushing debris from the clothing, rinsing it with water and applying spot cleaning as necessary.

If further cleaning is necessary, follow these steps to clean it at a utility sink.

- Wear protective gloves and safety glasses.
- Pre-treat heavily soiled areas or spots with a NFPA-compliant degreasing solution.
- Do not use chlorine bleach.
- Use warm water that does not exceed 105° F (40° C).
- Gently brush with a soft bristle brush.
- Rinse thoroughly — this may require draining and refilling the sink several times until the rinse water is clear.
- Air dry by hanging or placing in designated dryer; do not dry in the sun as the UV rays will degrade the outer shell's fabric.
- Inspect for cleanliness after drying.

Any gear that can't be cleaned by these methods should be taken out of service.

4. Do advanced cleaning at least once a year
This is a thorough cleaning that requires personal protective clothing to be taken out of service. Advanced cleaning procedures should be based on the original manufacturer's recommendations.

Advanced cleaning should be conducted at a minimum of every 12 months, or whenever ensemble is soiled to the extent that it cannot be cleaned through routine cleaning.

This also is necessary when there is an obvious odor or visible contamination that cannot be sufficiently removed with routine cleaning. This may include diesel fuel or soil.

5. Pre-treatment severely soiled areas
Pre-treating severely soiled areas of garment component with a specialty spotter agent for turnout gear can greatly enhance the machine laundering process.

When pre-treating, wear hands, eyes and face protection. Allow specialty spotter to soak into the fabric and stain. Gently scrubbing with a soft-bristle brush may help remove stubborn stains.

For globs of tar that have adhered to the fabric, allow the spotter to soak into the tar and fabric. Next, using a plastic or wood scrapper, gently lift tar from the fabric's surface.

6. Choose a laundry machine
Never wash clothing components in a washer that's used for things like work uniforms, bed sheets, etc. Machine washing is best done in a front loading washer/extractor to limit damage caused by top-loading machine agitators.

Washer/extractors specifically designed for laundering protective clothing not only provide more effective cleaning, they also greatly reduce the time to properly dry it because the extractor removes significantly more water from the components.

7. Do specialized cleaning or decontamination after a hazmat incident
NFPA 1851 specifies that when protective clothing has been exposed to known hazardous chemicals or bio-hazards, it should be removed from service for specialized cleaning.

Fire departments should continue to rely on the recommendations from manufacturers for specific guidance on what steps to take with protective clothing that's been contaminated with a known chemical or bio-hazard material.

If firefighters and their chief officers ensure these seven steps are taken, more firefighters can be working in cleaner and safer turnout gear. And maybe the new badge of honor will be squeaky-clean bunkers.