

## **Basic Turnout Gear Care**

NFPA 1851, *Standard on Selection, Care, and Maintenance of Protective Ensembles for Structural Firefighting and Proximity Firefighting*, has led to an increased awareness among firefighters for the need to have turnout clothing laundered regularly. NFPA 1851 sets **minimum** requirements for the inspection, care, and cleaning of all protective ensemble elements covered by NFPA 1971.

The manufacturers label on most garments provides **very basic** information for laundering; however, what follows is a much more comprehensive set of instructions for cleaning gear:

### **Machine Washing**

We are often asked if machine washing could affect the protective qualities of your turnout gear. The special fabrics that make up your turnouts contain inherent flame and heat resistance properties, which cannot be washed off or worn out. However, given the nature of the contaminants to which firefighters are exposed, you should **NEVER, NEVER** use the same machine that you do your home laundry in. When machine washing, always prepare the clothing as directed, by separating removable liners and DRDs from outer shells and fastening all closure systems. Use warm water and a normal cycle; water temperature should not exceed 105°F. Following each complete wash cycle, thoroughly rinse your garments. Liners should be turned inside out, while DRDs should be laundered in a mesh bag; every separable component should be laundered separately.

Protective clothing should always be washed by itself; do not overload the washing machine, do not use softeners, and **NEVER** use chlorine bleach. Our recommended method of drying is to hang in a shaded area that receives good cross ventilation or hang on a line and use a fan to circulate the air. Naturally, the turnout system will dry more quickly if you separate the layers for laundering and turning the liner system inside out will facilitate drying of the quilt thermal barrier.

### **Cleansers**

Cleansers generally fall into two categories, detergents and soaps. Of the two, detergents make the best cleansers because they are formulated to contain special agents that help prevent redistribution of soil. Soil redistribution is soil which is first removed from a laundered article, but later in the same wash cycle is redeposited as a thin soil film on the entire surface of the article. The most distinctive advantage of detergents is that they do not form curd in hard water. Soap curd is the material which forms a ring around the bathtub when bathing with soaps, and this curd is extremely difficult to rinse out of your garment. All cleaning agents are clearly labeled as being either detergents or soaps; and we recommend liquid detergents, since they are less likely to leave any residue on the clothing. It should also be noted that NFPA 1851, *Standard on Selection, Care, and Maintenance for Structural Firefighting and Proximity Firefighting Ensembles* requires that cleaning and contamination solutions shall have a pH range of not less than 6.0 pH and not greater than 10.5 pH.

## Spot Cleaning and Pretreating

Precleaners can be used to clean light spots and stains on protective clothing. Squirt the precleaner onto the soiled area and gently rub fabric together until a light foam appears on the surface; this foam should be completely rinsed off with cool water prior to washing. A soft bristle brush, such as a tooth brush, maybe used to gently scrub the soiled area for approximately one to one and a half minutes. An alternative method would be to pretreat garment by applying liquid detergent directly from the bottle onto the soiled area and proceed as with precleaners. Any spot cleaning or pretreating should be followed by machine washing prior to field use.

## Decontamination

For extreme contamination of products from combustion, fire debris, or body fluids, removal of the contaminants by flushing with water as soon as possible is necessary, followed by appropriate cleaning. In concentration of Lysol, or a 3%–6% concentration of stabilized hydrogen peroxide. Liquid glutaraldehyde, available through commercial sources, will also provide high to intermediate levels of disinfectant activity. The current edition of NFPA 1851 states that if a garment is verified as having been exposed to chemical, biological, or radiological agents, that garment should be immediately removed from service and retired. When decontamination is not possible, the garments should be discarded in accordance with local, state, and federal regulations. Garments that are discarded should be destroyed.

## Hand Washing

The industry recognizes that hand washing is generally not able to remove the ground-in soil embedded in the material fibers and usually only serves to remove surface dirt. However, in the event that you do not have access to a washing machine and must hand wash your garment, remove your liner system and lay the outer shell on a non-abrasive hard surface. Using a soft bristle scrub brush and a detergent (not soap), clean your garment by making circular motions with the brush, forming progressively larger circles until the entire surface has been washed. You must then rinse the shell, using clear water, to ensure that all of the detergent has been removed. We recommend that you rinse the entire garment several times to avoid any possibility of soil detergent residue. NFPA 1851 does require that machine laundering be used for advanced cleaning, unless specifically prohibited.

## Dry Cleaning

Dry cleaning can adversely affect both the 3M triple trim and the REFLEXITE® trims, as well as the moisture barrier, and is therefore *not recommended*. If you should decide that your particular exposure requires dry cleaning, knowing and accepting the risks involved, you must be sure and specify to the launderer to use non-flammable dry cleaning processes that will not adversely affect the materials. Again, our experience is that dry cleaning may well result in damaging certain components of the gear.

## Conclusion

In caring for your turnout clothing, you must always remember that it features three-piece layering and multiple components, and you must consider each individual layer and component when deciding how to clean. We do encourage every department to keep their clothing clean and to regularly inspect and repair as needed. Having dirt, soot, and other debris clinging to your gear

represents a safety hazard. Clean turnout gear is lighter in weight, lasts longer, and is more visible than dirty turnout gear.

**Reference;**

- NFPA 1851, *Standard on Selection, Care, and Maintenance of Protective Ensembles for Structural Firefighting and Proximity Firefighting*
- *Turnout Gear Care & Cleaning | Globe Turnout Gear [globe.msasafety.com](http://globe.msasafety.com) › care-cleaning*