



Jeffrey O. and Grace G. Stull

PPE Update

Firefighting PPE evolutions stemming from NFPA

Exploring changes in product offerings, recommendations and use criteria for fire hoods

Jun 27, 2017

At the exposition portion of every Fire Instructor Development Conference (FDIC), there is an abundance of new products and the associated claims for what these products can do to improve firefighter health and safety.

Certainly, 2017 was no different from previous years; however, in the world of PPE, some products being offered on the showroom floor explored a new dimension.

NFPA SETS THE STAGE IN 2016



Industry will continue its development process to come up with better and higher performing products, and not always at increased costs. (Photo/Joe Thomas of Greenbox Photography)

Carcinogen-based exposure concerns led headlines in 2016. Firefighter hoods, a mainstay part of the protective ensemble for structural firefighting – realized a transformation as manufacturers offered a completely new product – what some suppliers are calling the barrier hood.

The IAFF FAST Report released in 2015 led the push for new PPE with visually graphic results showing inward particle penetration over large parts of the body (most pronounced in the head and neck areas not covered by the SCBA facepiece).

In 2016, new hood products were pushed out into the marketplace to address the known shortcomings of the protective envelope around the firefighter – existing porous knit hoods which readily let fire gases and particulates through the materials and onto the firefighter's skin.

Beginning with the 2016 FDIC, new barrier hoods arose touting protection against carcinogenic laden soot particles. Some products were openly introduced and marketed, while others went through additional testing and field validation work.

Several products were certified to the existing NFPA 1971 that addresses all elements of the ensemble, while industry leaders debated what additional requirements would apply to this new hood product category in the latest edition of NFPA 1971, which was then in an active stage of revision..

As expected with any new offering, there was a certain amount of uncertainty surrounding putting barrier hoods onto firefighter heads. After all, the fire service was just now recognizing the importance of using standard industry hoods and keeping them clean. Programs like “Wash Your Hood Sundays” and practices for handing out hoods for each response rather than individually issuing hoods were starting to take hold in many fire departments.

Enter a new product that in some cases was almost 6 to 8 times the cost of an ordinary hood (from \$30 to almost \$200) and some end user hesitation was no surprise. With already stretched municipal and community department budgets, many in the fire service were not willing to transition hoods from a near commodity to now a premium product.

Therefore, 2016 became the year of the learning curve. In addition to hoods, turnout clothing manufacturers were beginning to examine their regular coat and pants features to address other areas for particulate entry. Some manufacturers had been doing this for years, but the idea was now becoming popular.

PPE PRODUCT OFFERING CHANGES TAKING HOLD

An interesting thing happened at the 2017 FDIC? There were more what are now referred to as particulate-blocking hoods entering the marketplace. Some products introduced the prior year went through transformations. Additionally, the market saw a substantial drop in the average price of these new hoods.

Clearly, changes had occurred between the two tradeshow. One such change: the technical committee responsible for NFPA 1971 came up with the criteria by which the new products would be

defined.

Specific tests were set in place to measure the effectiveness of materials used in the construction of the hoods and these criteria were combined with a minimum breathability requirement to prevent hoods from becoming over burdensome. Moreover, manufacturer specialty testing became more commonplace and expectations were raised along a common theme – lightweight, durable and affordable protection.

Distinctive advantages and disadvantages exist among the different protective blocking hoods which are in the marketplace currently and there are still other products yet to be introduced which were hinted at during FDIC.

In essence, the 2017 FDIC cemented the idea of the barrier hood for firefighter protection as part of the overall ensemble. Though not mandatory, the new product became another tool in the arsenal for affecting greater levels of safety and health for firefighters.

These principles are also coming to fruition for standard turnout clothing. More manufacturers are recognizing that protection solutions must address limiting soot exposure to the firefighter's skin. This cannot be accomplished by encapsulation. Rather, selective innovative designs have to be implemented that continue the trends for greater mobility and stress relief.

THE PPE OUTLOOK

Fire departments are still faced with tough choices when it comes to selecting their PPE, including particulate-blocking hoods and enhanced turnout clothing. Hoods are no longer an inexpensive and nearly disposable product, even at the reduced costs, with some hoods priced just below \$100.

More expensive products often offer greater performance and come with the expectation that this performance will be delivered over a longer time span. The ability to replace or swap out hoods has to be considered at a large cost differential.

Further, there are several new maintenance considerations that did not previously exist, particularly due to more frequent cleaning. Thus, while the option for a particulate-blocking hood (and related gear) has made its way into the fire service, there is still an entire infrastructure of selection and practice to be established.

Industry will continue its development process to come up with better and higher performing products, and not always at increased costs. The committees responsible for standards affecting the manufacture, selection, use and care will further their efforts for defining minimum criteria and appropriate practices to enable this transition.

The coming year will no doubt bring further product improvements, the establishment of standard operating procedures and new research findings to support a further transformation of firefighter PPE.

About the author

Sponsored by *Globe*

Jeffrey and Grace Stull are president and vice president, respectively, of International Personnel Protection, Inc. They are members of several NFPA committees on PPE as well as the ASTM International committee on protective clothing. Mr. Stull was formerly the convener for international work groups on heat/thermal protection and hazardous materials PPE as well as the lead U.S. delegate for International Standards Organization Technical Committee 94/Subcommittees on Protective Clothing and Firefighter PPE. They participate in the Interagency Board for Equipment Standardization and Interoperability and have authored the book, "[PPE Made Easy](#)." Send questions or feedback to the Stulls via [email](#).

Tags > [Exclusives](#) • [Fire Chief](#) • [Personal Protective Equipment](#) • [Safety](#)

RECOMMENDED FOR YOU




[Helicopter rescues skyrocketed 225% in Calif. county this year, first responders say](#)

[NC fire station to get bulletproof walls after shots fired into building](#)

[Ceiling collapses on ambulance at Houston fire station](#)



JOIN THE DISCUSSION



Be the first to comment

Please [sign in](#) or [register](#) to write your own comments below.

Before commenting, please read [FireRescue1's Commenting Policy](#)

FIRERESCUE1 TOP 5

- 11 requirements to become a firefighter
- 4 Mich. EMS providers on leave after woman mistakenly declared dead
- 1 dead, 3 FFs electrocuted in Fla. sidewalk collapse
- Firefighters on film: 6 firefighters turned actors 🗑️💬 1
- FDNY leaders urge members not to attend 9/11 events 💬 1

MORE FIRERESCUE1 ARTICLES >

