



Results of a Wear Trial Evaluating the Repair Costs of Moisture Barriers According to NFPA 1851’s Inspection, Cleaning, and Repair Protocols.

Introduction:

The adoption of NFPA 1851 by many fire departments across the country has revealed that moisture barriers are subject to damage during use which results in previously unexpected repair costs. The objective of this field trial was to measure the repair costs associated with moisture barriers in structural fire fighting turnout gear when it is maintained, inspected, and repaired according to the NFPA 1851 Standard and to measure the potential reductions in repair cost provided by two new moisture barriers from W. L. Gore & Assoc., Inc.

Field Trial:

To gain a good representation of performance after actual wear, 40 turnout ensembles were employed in this field study. The construction of the coats included a split down the back, thereby having two panels, allowing for two different moisture barriers to be directly compared against each other. In addition, the construction of the pants allowed for separate moisture barriers in each leg. Each set of field trial gear randomly incorporated a combination of two different moisture barriers. All of the turnout gear in the field trial was built to the specific fire departments’ specifications. Twenty participants in the field trial were active professional fire fighters while another 20 participants were cadets going through their training academy. Inspection and repairs were conducted according to NFPA 1851 by a Verified ISP.

Results:

The resulting field trial repair costs are given in the table below and are in the same range as moisture barrier repair costs normally found in turnout gear that is approximately 3 years old and which has seen “normal” use.

Moisture Barrier Repair Costs (Material and Labor) after Complete Liner Inspection According to NFPA 1851 Standard

Barrier	Coat	Pant
CROSSTECH® moisture barrier	\$ 81.29	\$ 12.52
NEW! CROSSTECH® black moisture barrier	\$ 28.16	\$ 9.39
CROSSTECH® 3-layer moisture barrier	\$ 0.00	\$ 0.00

Conclusion:

In this field trial, following an NFPA 1851 inspection and repair protocol, repair costs were reduced by 50% with the new CROSSTECH® black moisture barrier and virtually eliminated with CROSSTECH® 3-layer moisture barrier.