



## AEROFLEX® TURNOUTS

Since the 3-layer composite turnout was standardized, little has changed in the world of turnouts. But recognizing that new material technology and garment design could radically increase safety, Fire-Dex worked with top fire departments and laboratories to create a whole new generation of gear: AeroFlex® turnouts.

**AEROFLEX® REVOLUTIONIZES FIREFIGHTER SAFETY WITH UNMATCHED BREATHABILITY AND HEAT STRESS PROTECTION.**

Designed with VaporLite® Panels and AeroVent® Technology, AeroFlex® supports core body temperature regulation, encouraging airflow to keep your body cool and comfortable—without compromising protection. This breakthrough in modern day turnouts combines advanced material science with innovative design features to address the #1 cause of line of duty deaths - heat stress and cardiac-related events.

**RET**  
15-19

**THL**  
340+

**TPP**  
35+



## VaporLite Panels

VaporLite Panels are a breathable 3-layer composite that maximizes breathability where it's needed most. VaporLite Panels are built exclusively with our TECGEN71® outer shell, achieving industry-leading Resistance to Evaporative Heat Loss (Ret) and Total Heat Loss (THL) performance. The Panels are placed along the armpits and groin where encapsulated heat is most concentrated. Panels are placed along the armpits and groin where encapsulated heat is most concentrated.

## AeroVent Technology

AeroVent Technology utilizes a patent-pending, one-way ventilation design that operates in conjunction with the pressure differential between the outer environment and the microclimate inside your gear, allowing sweat vapor to escape without letting heat inside. A particulate blocking material inside the vents further prevents harmful contaminants from reaching inside.

The vents lie within the VaporLite Panels, with two positioned along the armpits and two placed on the inner thighs. Those areas are the most susceptible to heat buildup and provide the best opportunity for air to escape without being blocked by the SCBA.

# INDEPENDENT TESTING

Fire-Dex gave AeroFlex turnouts to some of the top research universities in the country for independent testing.

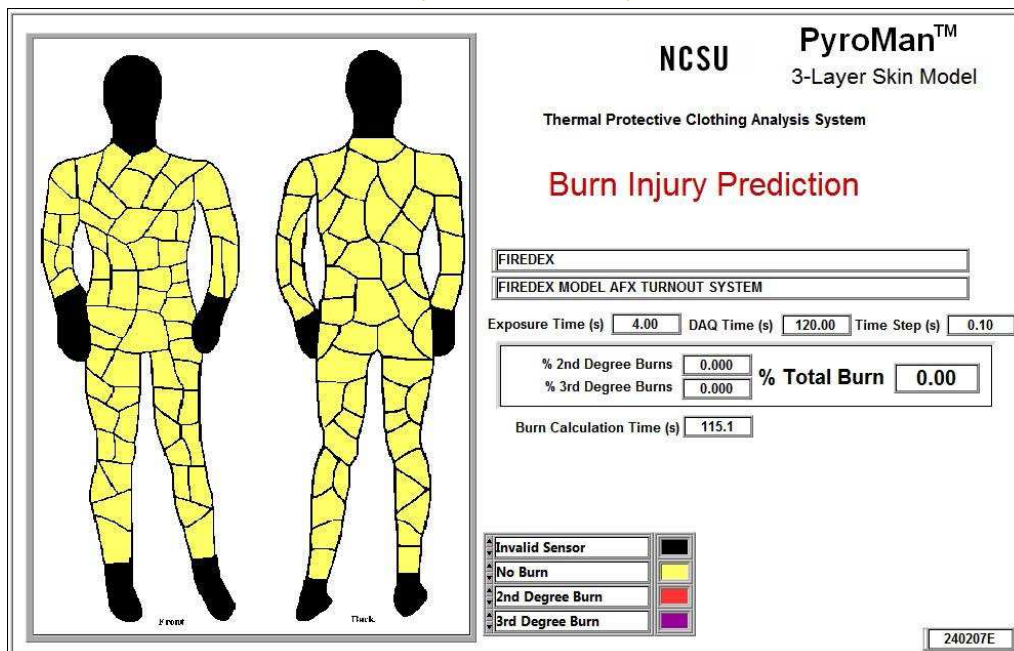
## PyroMan™ Burn Test, North Carolina State University

**Lab:** NC State University Textile Protection and Comfort Center

**Test:** 2000°F flames for 4 seconds, directly targeted at VaporLite Panels

**Results:** 0% third-degree burns, showing that the vents provide adequate protection from fire

SOURCE: [PyroMan® Test Report, 2024](#)



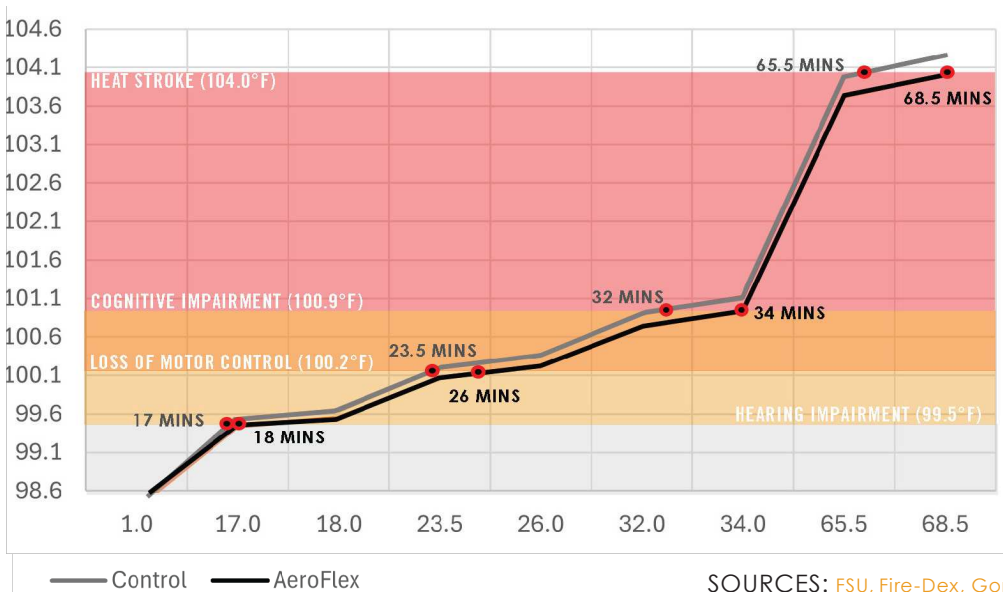
# Physiological Cooling Test, Florida State University

**Lab:** FSU ThermaNOLE Comfort Lab®

**Test:** Simulated overhaul on a manikin that heats and sweats like a real human. The test tracked sweat rates, core temperatures, and garment breathability of standard turnouts vs. AeroFlex turnouts.

**Results:** Significantly greater breathability and thermal comfort that lowered the risk of heat stress. Breathability allows sweat to evaporate more easily, a critical part of the body's ability to cool itself. Adding vents to gear resulted in lower Ret (20.5% improvement) and higher THL (16.2% improvement), a massive increase in breathability. Researchers also showed that the increased breathability of AeroFlex resulted in significantly lower sweat rates and core temperature increases.

SOURCES: [FSU ThermaNOLE Comfort Lab@ Test Report, 2024](#)



When compared with standard turnouts, AeroFlex turnouts resulted in lower core temperatures over time during periods of high activity. Small increases in core temperature can be detrimental on the fireground; AeroFlex can provide cooling that gives more working time before heat exhaustion occurs.

## AEROFLEX PERFORMANCE ADVANTAGE

Standard VS Vented Turnouts



**0.3% LOWER Core Temp**



**33% LOWER Sweat Rate**



**20.5% BETTER Intrinsic Ret**



**16.2% BETTER THL**



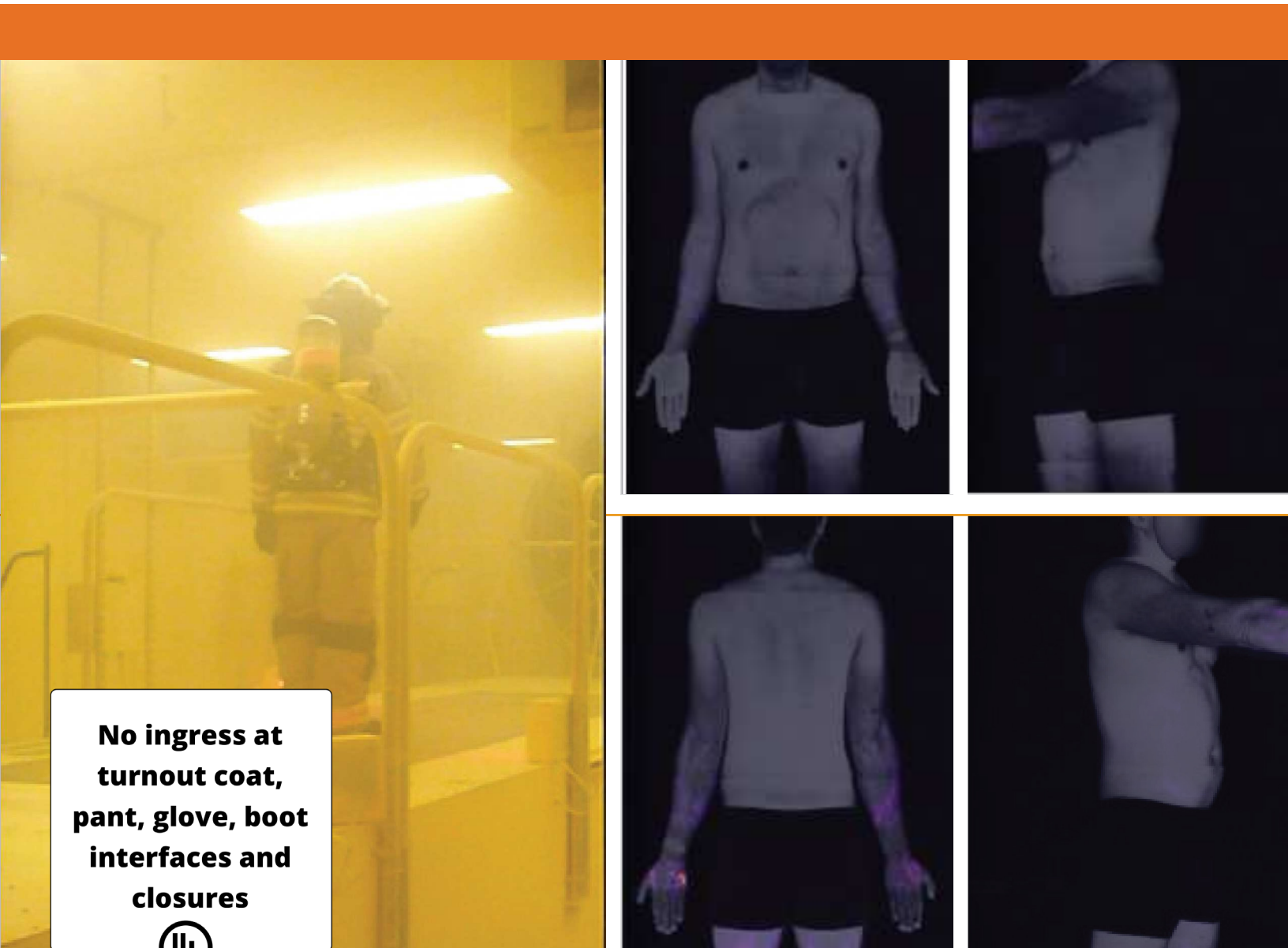
**20% MORE Thermal Comfort**

## Particulate Blocking Tests, RTI International

**Lab:** RTI International and UL

**Test:** Exposure to particulate matter in full PPE ensemble with human subject. The tester's skin was then examined for any evidence of contamination.

**Results:** Verified by UL, no penetration of the garment or AeroVents, demonstrating that the particulate barrier in the vents does not allow contaminants back through the garment.



**No ingress at  
turnout coat,  
pant, glove, boot  
interfaces and  
closures**



## THE BOTTOM LINE

AeroFlex turnouts aren't like anything else in the fire industry.

Made for firefighter safety, packed with the latest in fabric design technology, and independently tested to meet the rigors of the fireground.

Simply put: AeroFlex turnouts protect like nothing else because they're built like nothing else.

