



Firefighter Air Replenishment Systems (FARS) Air Quality Fact Sheet

Fire Department SCBA Systems Are Dependable

Self-Contained Breathing Apparatus (SCBA) are in use throughout the fire service, and are one of the most important items of personal protective equipment for firefighters. They allow firefighters to conduct crucial interior operations such as fire attack, search and rescue, ventilation, and overhaul.

According to a report by the Federal Emergency Management Agency (FEMA) on SCBA reliability, catastrophic failure of SCBA is rare. “Catastrophic failure” is defined as the sudden and unexpected failure of any component that would expose the user to an environment immediately dangerous to life or health (IDLH), or hinder their ability to escape from that environment.¹

FARS Perform Better than Fire Department SCBA Systems In Air Quality Tests

A recent study of nearly 7,000 air quality reports in FARS systems over a 7-year period yielded the following conclusions:

- FARS air samples met NFPA 1989 compliance standards more often than non-FARS compressed breathing air samples – 97% of the time versus 96% for non-FARS compressed breathing air samples.
- Conversely, FARS samples were non-compliant only 2.7% of the time, versus 3.95% for non-FARS compressed breathing air samples.
- Non-compliant FARS samples were due to technician failure or testing equipment failure, not due to flaws in the system.
- Overall, FARS air samples were at least as safe and more compliant with NFPA 1989 air quality standards than non-FARS compressed breathing air samples.²

FARS Air Monitoring System Alerts Firefighters to Air Quality Imbalance

FARS systems are equipped with an air monitoring system. The system is monitored on a 24-7-365 basis for carbon monoxide and moisture levels. When fire crews arrive on scene, they can check the air quality from the exterior connection panel before accessing the air in the system. In addition, the air monitoring system sends an alert to the fire command center of the building if an air quality imbalance is detected. This fail-safe system component ensures that firefighters will not access a system with an air quality imbalance.

Chances of a Fire Occurring During an Imbalance are Infinitesimal

Given FARS miniscule failure rate, the odds of a firefighter encountering a system with an air imbalance during a fire or other IDLH event are so infinitesimally small as to be incalculable.

¹ <https://www.usfa.fema.gov/downloads/pdf/publications/tr-088.pdf>

² Summary of FARS Air Quality Report by Ruby Ochoa, Trace Analytics, 2020. For a copy of the full report, please contact info@firefighteraircoalition.org