Investing in Trusted Turnout Gear: A Case Study

"I asked, 'If you could give your entire organization new gear today, what would it be?' It was always TECGEN71."

-Chief Kline, Lady's Island-St. Helena Fire District

Choosing effective and reputable turnout gear can be a difficult decision. In 2019 when the Lady's Island–St. Helena Fire District in Beaufort, South Carolina, chose to purchase new turnout gear, Chief Kline and his committee conducted an extensive research process. Through their comparison of six different garment and textile manufacturers, the committee worked to identify the most reputable fabric and garment manufacturers to keep their team safe. With 34 years of service in his distinguished career, Chief Kline was acutely aware of the importance of choosing the best gear to protect his firefighters.

"My main priority is to provide our team with the best equipment and gear so they are safe on their missions and can provide a higher level of service to the citizens of Beaufort County." -Chief Kline, Lady's Island-St. Helena Fire District

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Advancements in turnout gear fiber, fabric, and garment technology had come a long way since the team had last been outfitted. "We try to stay on top of industry advancements, and turnout gear is one of the most critical PPE items we provide our firefighters," Chief Kline noted. It was important to choose turnout gear that offered the optimal balance between thermal protection performance (TPP) and total heat loss (THL), utilizing the latest in protective and performance technologies to shield his team against heat and flames while reducing the likelihood of heat stress.

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Exceeding NFPA 1971

Several factors encouraged Chief Kline and his committee to select TECGEN71—the most important of which was the need to align their gear to industry safety standards. TECGEN71 made by Milliken is certified to not only meet but exceed NFPA 1971 standards to provide structural fire protection for firefighters.

While all flame resistant (FR) fabric manufacturers must ensure their fabrics meet industry standards through third-party certifications, Milliken goes beyond these minimum requirements. In addition to maintaining relevant certifications, Milliken continues testing their

protective fabrics after certifications have been granted to ensure they produce the highest quality fabrics for firefighter safety. Additionally, Milliken facilitates wear trials with various fire departments to garner feedback on how the fabric perform. These measures help broaden the brand's ability to produce leading fabrics that consistently perform in the face of firefighting hazards.

Benefiting from Breathability

Situated in the heart of the South Carolina Lowcountry, Beaufort is known for its high temperatures and humidity, with heat indexes regularly reaching 110 degrees Fahrenheit. "We still have to do our job; we still have to fight fires and can't take breaks because we are too hot," explained Chief Kline. "We need breathable and lightweight gear, and TECGEN71 fits the bill. The high breathability and THL values were key in our decision-making process."

Heat stress is a common threat to firefighters, many times causing injuries and even death. In fact, heat stress and cardiac events are one of the top contributors to mortality rates in the fire service. Being exposed to extreme temperatures when wearing turnout gear can easily cause a firefighter to overheat, especially on the humid South Carolina coast. Fabrics that are lightweight, thin, and moisture wicking are instrumental in keeping firefighters cool, and a key factor the committee analyzed during their research.

A balance between TPP and THL levels creates the ideal level of external protection, while simultaneously working to keep the wearer cool and dry. If the turnout gear does not have high THL performance, the body is unable to release heat and sweat through the gear and unable to cool itself. Conversely, if the fabric does not have sufficient TPP performance, the wearer is more susceptible to burn injuries. Balancing THL and TPP levels helps reduce the likelihood of experiencing heat stress symptoms while still providing the necessary amount of protection against flames and radiant heat.

Keeping it Light and Flexible

When comparing TECGEN71 to their team's current gear, the lighter weight at almost four pounds was immediately noticeable. The heavier the gear, the more effort a firefighter has to exert to move and perform their job. This increased work on the body raises core temperatures and creates unnecessary stress on the body. Lighter fabrics also enable additional flexibility and move better with the body, helping firefighters to perform their tasks more easily.

Real-World Praise

"We had a lot of tough questions, and Milliken was able to answer each one."

Milliken's commitment to transparency and ongoing end-user education instilled confidence in choosing TECGEN71.

Chief Kline reached out to several trusted colleagues whose departments wear TECGEN71 to hear their first-hand experience. "I asked, if you could give your entire organization new gear today, what would it be? It was always TECGEN71."

His colleagues explained that members who wear TECGEN71 during training exercises and structural calls felt cooler and more comfortable than those who did not. They marveled at TECGEN71's performance in the field and was unwilling to trade it for another fabric brand. The consistent commitment to TECGEN71 across departments was eye-opening.

Made in the U.S.A.
Knowing Milliken's southern manufacturing roots and long heritage also went a long way. Supporting a business that manufactures its products in the United States was a major selling point, and knowing the company stood the test of time gave Chief Kline and the committee confidence that Milliken would be around for the next 150 years.

"It was important to us to have a reputable textile manufacturer for our turnout fabrics, and the fact that Milliken is based in South Carolina was a big selling point." -Chief Kline, Lady's Island-St. Helena Fire District

The Deciding Factor—Commitment to Customers

While Milliken's innovative product portfolio and extensive textile expertise speak for themselves, it was the dedication to customer service that made it clear that TECGEN71 turnout gear was the best choice for the Lady's Island–St. Helena Fire District. Milliken associates traveled to visit Chief Kline and his committee—answering questions and explaining how fabrics are developed, manufactured, tested, and certified. "We had a lot of tough questions, and they were able to answer each one," Chief Kline explained. Milliken's commitment to transparency and ongoing end-user education instilled confidence in choosing TECGEN71.

After four months of thorough research, Chief Kline and the committee outfitted Lady's Island-St. Helena Fire District's 68 sworn firefighters in TECGEN71 turnout gear. They have not heard a single complaint from their team since.

TECGEN71 made by Milliken exceeded Chief Kline's expectations from day one. From the lightweight, breathable, and flexible characteristics to the protective peace of mind, Chief Kline and his committee remain confident they chose the best protective apparel for the Lady's Island–St. Helena Fire District firefighters.

Milliken FR fabrics are made in the USA by experts in moisture management and fire-resistant textiles to mitigate thermal exposure hazard risks.

To learn more about what Milliken is doing to help mitigate the heat stress risks facing firefighters, visit textiles.milliken.com.