

**TEGGEN** PPE™  
a Fire Dex brand



**TEGGEN** PPE™

Fire  Dex®  
family of brands



### 150 Years of Innovation Leadership

R&D 100 award winner for the 8th consecutive year

Over 5,000 patents globally

100+ PhD's

R&D  
100

### Operational Excellence

Operations consulting business working with large large multinational companies

Over 30,000 products produced 43 manufacturing facilities

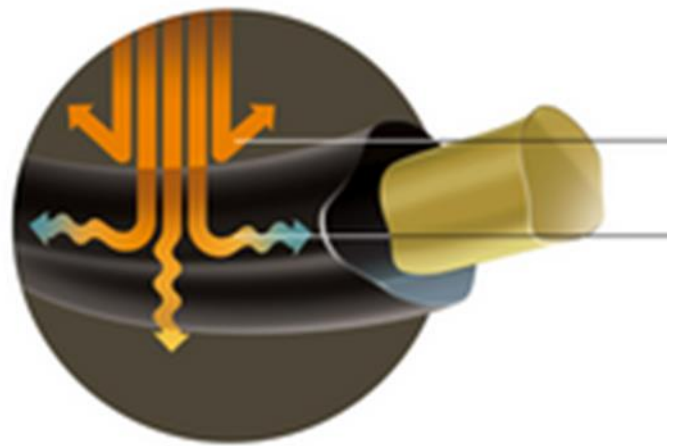
50 times a day = average interaction with Milliken products by a US consumer



TECGEN, a Fire-Dex brand, is a revolutionary breakthrough in personal protective equipment. This NFPA 1951 & 1977 dual certified garment is engineered to serve as an alternative personal protective equipment source.

Today's fire service responds to a multitude of emergency/service needs. Wearing heavy, bulky, non-breathable traditional NFPA 1971 structural firefighting gear is both impractical and a detriment to the wearers health.

90% of today's emergency/service calls are nonstructural fire related. Yet, the majority of today's first responders are wearing their traditional PPE to these nonstructural calls. 58% of line of duty deaths are a result of cardiovascular related failure. 27% of line of duty injuries are cardiovascular related.

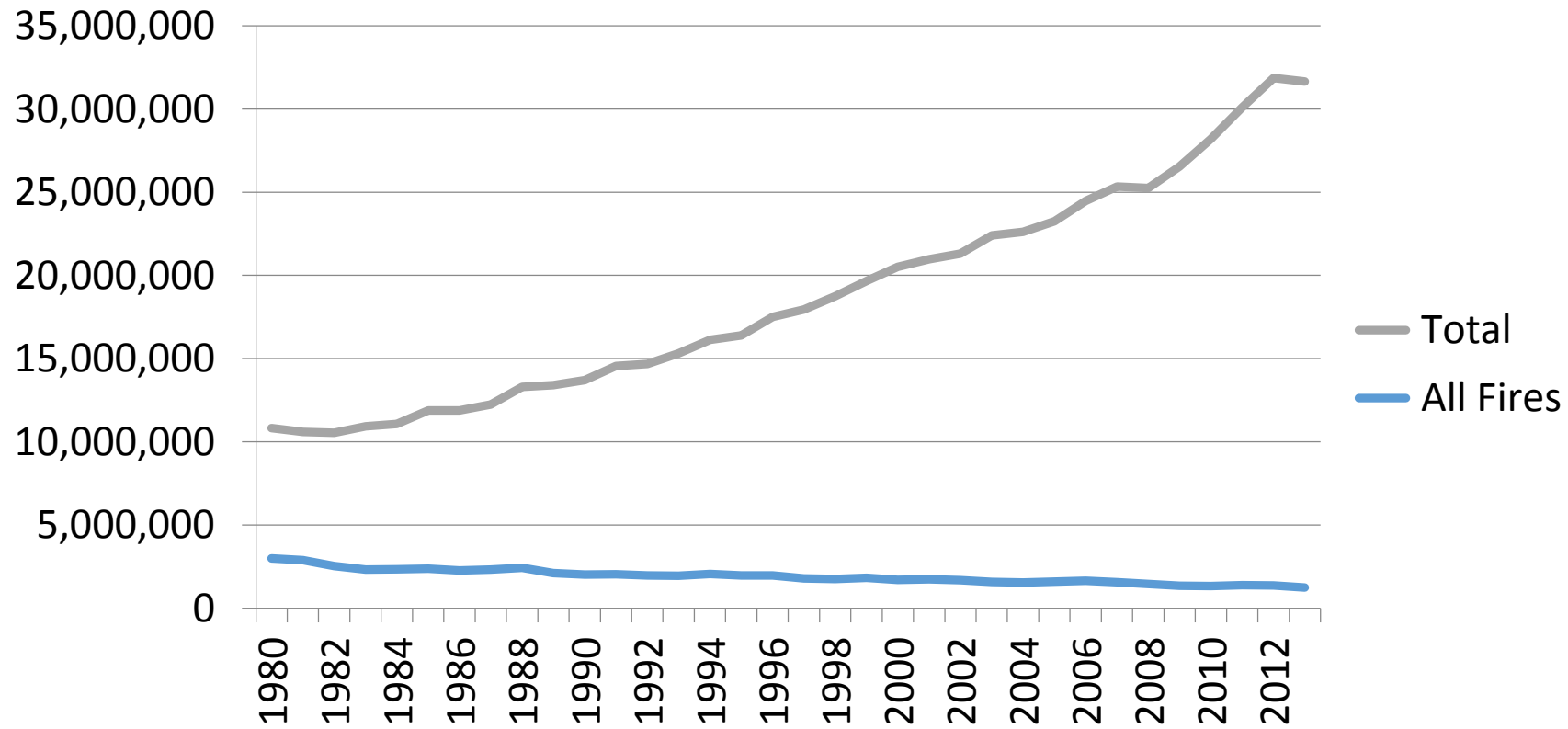


- Bi-regional carbonaceous fiber
- Carbon on the outside
- Acrylic core



# FIRE DEPARTMENT RESPONSES 1980-2013

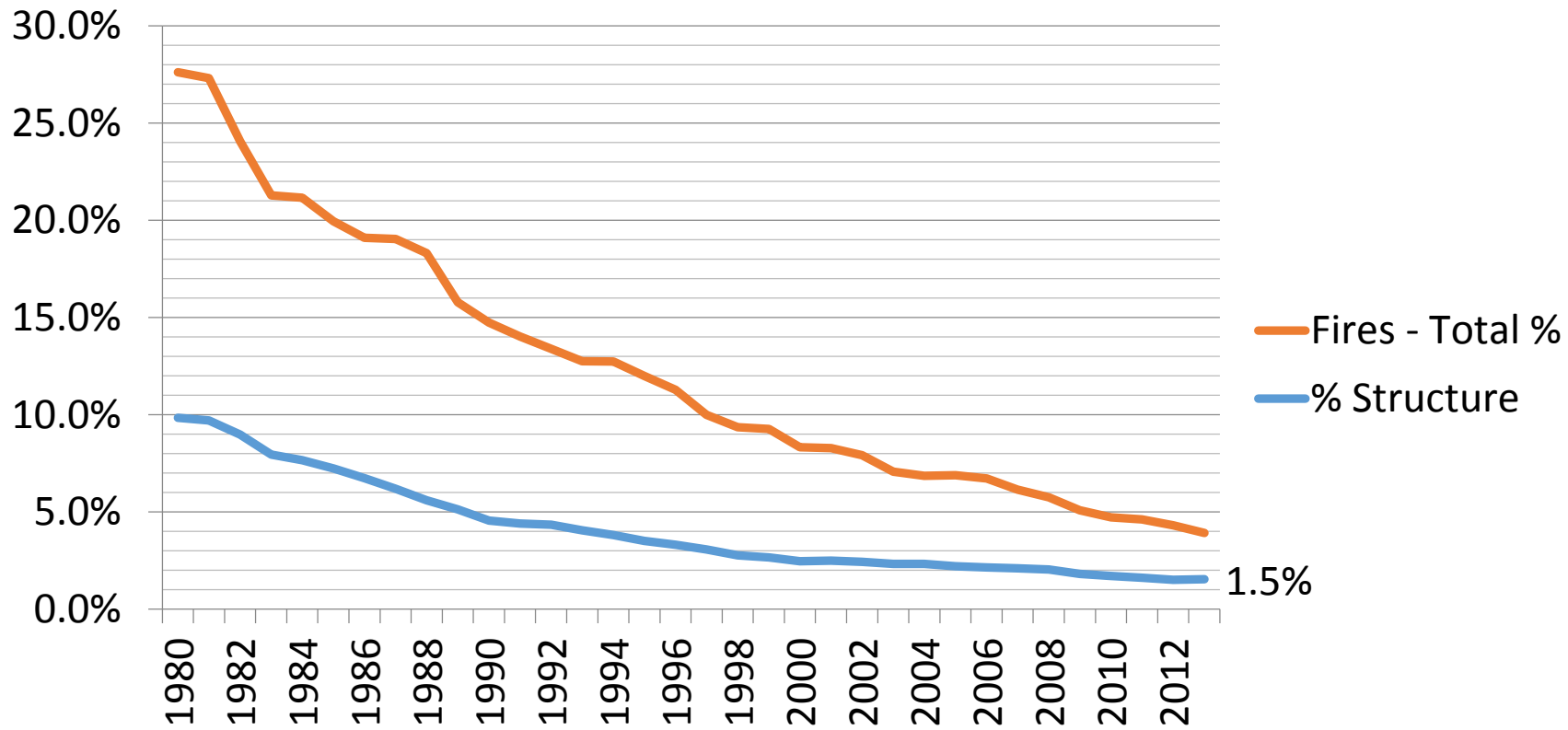
## Fire Department Responses



Source – NFPA Fire Statistics - 2014

# FIRE DEPARTMENT RESPONSES 1980-2013

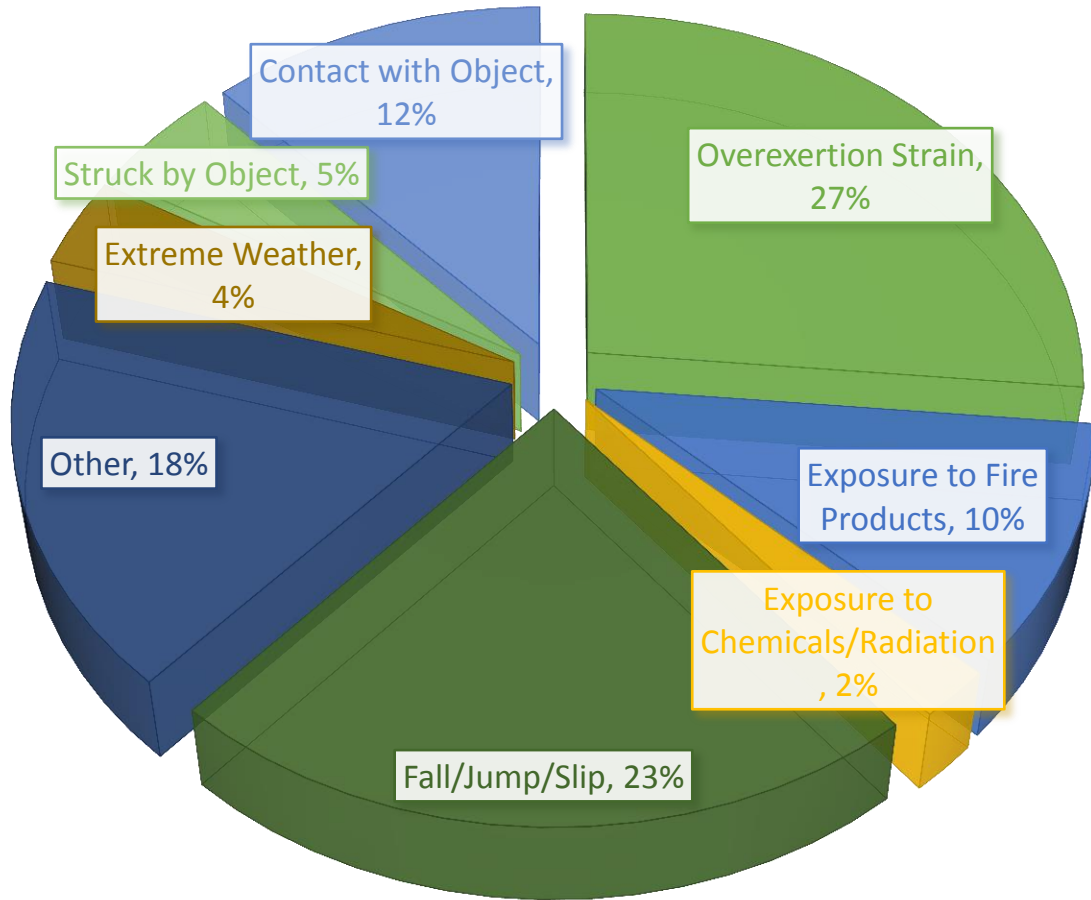
## Fires as a Percent of Total Responses



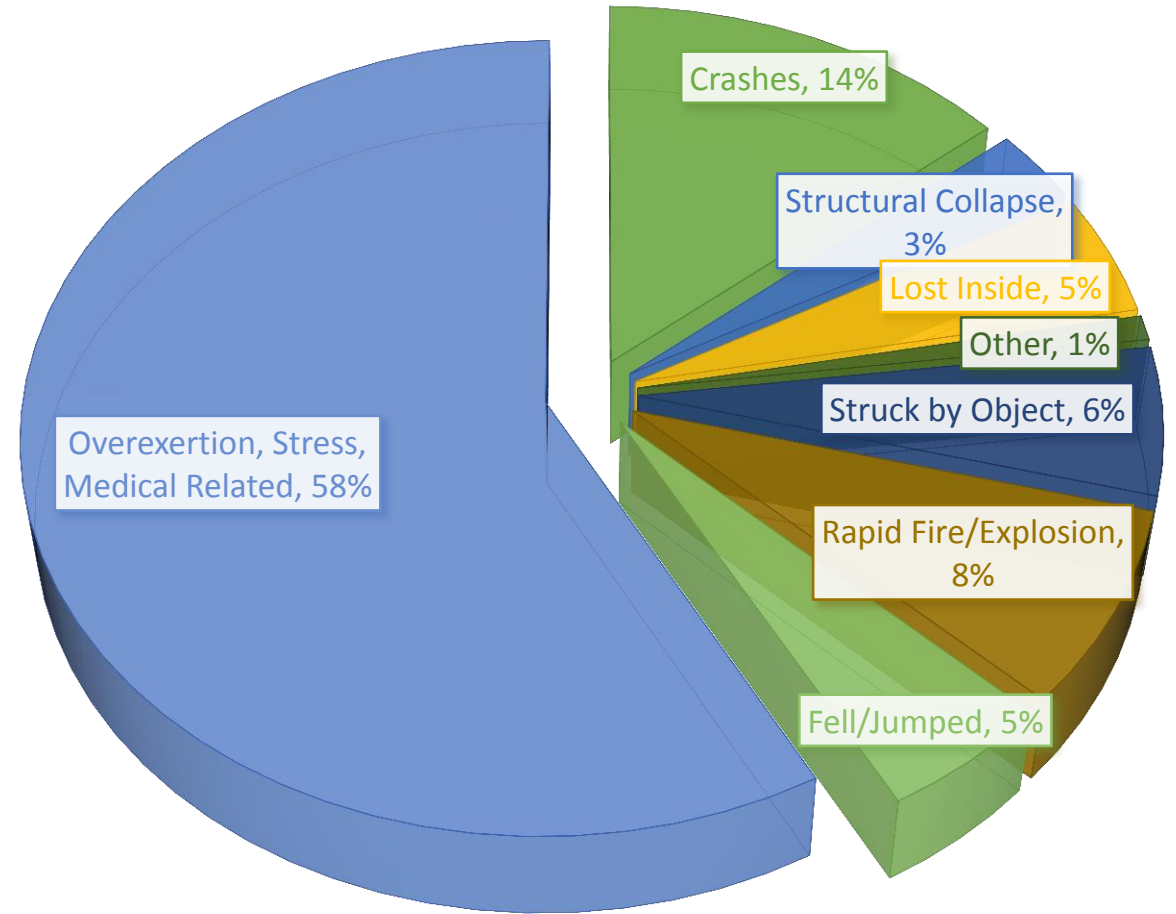
Source – NFPA Fire Statistics - 2014

# STATISTICAL COMPUTATION

**FIREFIGHTER LINE OF DUTY INJURIES**



**FIREFIGHTER LINE OF DUTY DEATHS**



Beyond the concern of cardiovascular stresses and failures, **carcinogen particulates and carcinogen smoke/fumes exposure is unavoidable** on both the fire ground and the engine room.

**Adherence to NFPA 1851 care and maintenance** protocols calls for NFPA 1971 traditional firefighting gear to be laundered after each use. Today's typical traditional firefighting gear costs in excess of \$2,000, with a limited number of launderings before the garment must be retired due to fabric fatigue and moisture barrier delamination and failure due to repeated launderings.

**TECGEN's expense profile is less than a third the cost of traditional firefighting gear.** The life cycle extension of your traditional firefighting gear by using only when necessary makes TECGEN an economic benefit to the fire department. Not to mention, the health and safety benefits to the firefighter.

# DUAL CERTIFIED PPE

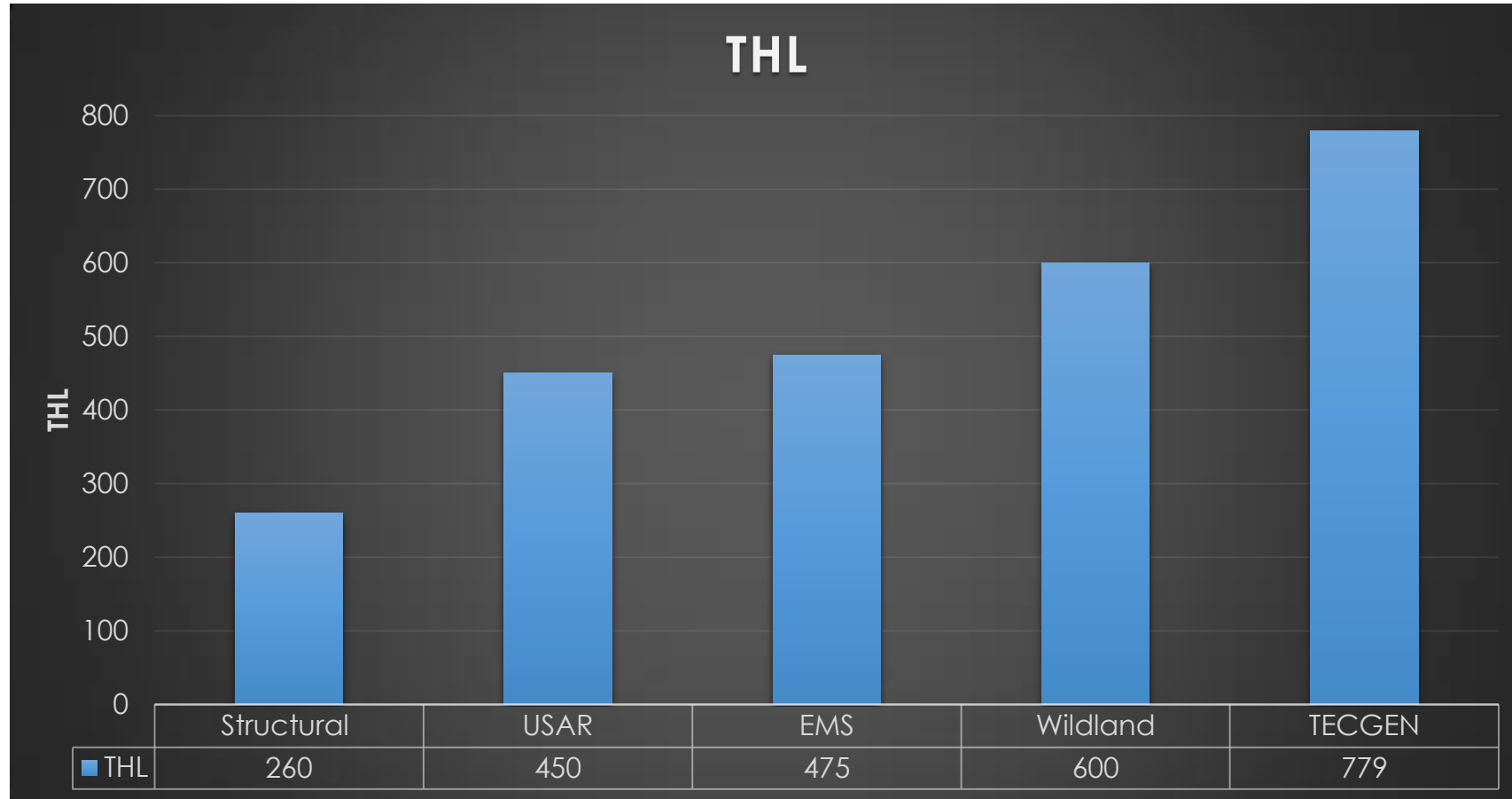


Dual certified to NFPA 1951 (Technical Rescue, Utility) and NFPA (Wildland Firefighting)

The alternate to turnout gear for 90% of responses:

- Medical Calls
- Extrication
- MVA
- Wildland/Grass Fires
- Search and Rescue
- Confined Space
- Trench/Angle Rescue
- Service Calls
- Traffic Control
- Incident Command
- Support Personnel

# TYPICAL TOTAL HEAT LOSS VALUES



**Total Heat Loss (THL) measures the ability of the material to allow heat and moisture vapor to escape from the wearer through the garment. This is an important factor in reducing heat stress.**

## PPE LEVEL 1



## PPE LEVEL 3



**TECGEN is available in 2 levels to accommodate every budget and every durability necessity. Also available in coveralls**

**TECGEN is available in sizes S-7X. With the most common sizes in stock for quick delivery.**

**TECGEN is available in 3 color options – Khaki, Black & Navy.**

**TECGEN stock sizes are typically available in under 2 weeks. Non-stocked sizes are available 8-10 weeks.**

# MANDARIN COLLAR



The mandarin collar provides a comfortable close fit to provide surrounding protection to the wearer.

Secure tab closure with hook & loop fastener.



# BI-SWING BACK



The bi-swing back is engineered with a deep pleat starting at the back waistline or belt and extending up to the shoulder on each side, to avoid constriction when the wearer's arms are extended.

The bi-swing back provides a measure of extra ventilation as well as promoting a higher rate of air circulation.

# FLEECE LINER



**TECGEN gear is now available with a zip-in liner for those times you need extra warmth.**

**Made with 6.0 oz Nomex fleece**

**Easily removable**

**Available in all TECGEN PPE jacket configurations**

# BDU STYLE WAIST



The BDU Style Waist provides comfort and a familiar fit and familiar feel.

Versatility is in all offerings. The TECGEN pant is available with belt loops, take-up straps, and suspenders.

# KNEE



**Our Level 3 garment has our highest level of knee protection and enhanced padding.**

**The closed cell foam knee pad is removable and replaceable in the event of contamination.**

**The Stedshield reinforced knee is an impervious solution that provides superior durability, outstanding traction, and is easily decontaminated.**

## PANT CUFFS & INSEAM REINFORCEMENT



**Our Level 3 garment has our highest level of cuff and inseam reinforcement.**

**Pant cuff and inseams are a high area of wear and abrasion. The strategic stedshield placement will extend the life of our garment.**

# STANDARD COAT FEATURES



# STANDARD PANT FEATURES



# COMPARITIVE FABRIC DATA

TEST	NFPA 1977-2011 SPEC	NFPA 1951-2013 SPEC	TECGEN 6.5OZ TWILL	SIGMA 7.5OZ TWILL	PBI TRIGUARD 590 5.3OZ 2X1 TWILL	100% NOMEX 7OZ TWILL
Radiant Protective Performance (RPP)	<b>&gt;= 7.0</b>	<b>N/A</b>	<b>15+</b>	11.5	9.1	8
Thermal Protective Performance (TPP)	<b>N/A</b>	<b>&gt;= 10</b>	<b>15.6</b>	12.2	13.3	14
Total Heat Loss	<b>&gt;= 450</b>	<b>&gt;=650</b>	<b>779</b>	752	735	680
Flame Resistance (After 100 Launderings)	<b>&lt; 4.0 inches</b>	<b>&lt; 4.0 inches</b>	<b>&lt; 0.5 inches</b>	3.5 inches	1.0 inches	2.2 inches
Heat & Thermal Shrinkage	<b>&lt;= 10.0%</b>	<b>&lt;= 10%</b>	<b>1.0% x 2.1%</b>	6.5% x 4.5%	1.2% x 0.8%	1.5% x 2.0%
Tear Resistance	<b>&gt;= 5 lbs</b>	<b>&gt;=6.75 lbs</b>	<b>32lbs</b>	14 lbs	16 lbs	14 lbs
Cleaning Shrinkage	<b>&lt;= 5.0%</b>	<b>&lt;= 5.0%</b>	<b>&lt;1%</b>	4.0% x 0.5%	<3%	<5%
Breaking Strength	<b>N/A</b>	<b>&gt;= 90 lbs</b>	<b>221 lbs</b>	150 lbs	158 lbs	260 lbs

# COMPARITIVE FABRIC DATA

**The TECGEN fabric out performs all comparable materials utilized in competitive offerings.**

**Highest THL (Breathability)**

**Highest TPP (Thermal Protective Performance)**

**Best in class durability (tear, breaking, abrasion) summarizes all of the measurable data in the TECGEN fabric class. Without parallel, TECGEN is the clear market leader in all categories.**

# LEGACY OF DEPENDABILITY

The visionaries of a NFPA dual-certified garment were ahead of their time. Today, we know the **dangers of cardiovascular related stress**. We know the dangers of **carcinogenic particulates**. The founders of TECGEN identified the need to get the modern firefighter into a protective ensemble that suited their primary work environment. Little did they know, they would forever change the landscape and mindset of the fire service.

From Bobby Halton and the 100+ FDIC Hands on Training instructors, the Federal Bureau of Investigation (FBI), the Alcohol Tobacco and Firearms, and the Drug Enforcement Agency, along with thousands of leading fire departments worldwide they all recognize TECGEN as the solution to the modern day fire ground protective challenge.

Fire-Dex is proud to carry on and enhance the legacy founded by TECGEN. We will continue the tradition of superior durability, ergonomics, and value.