



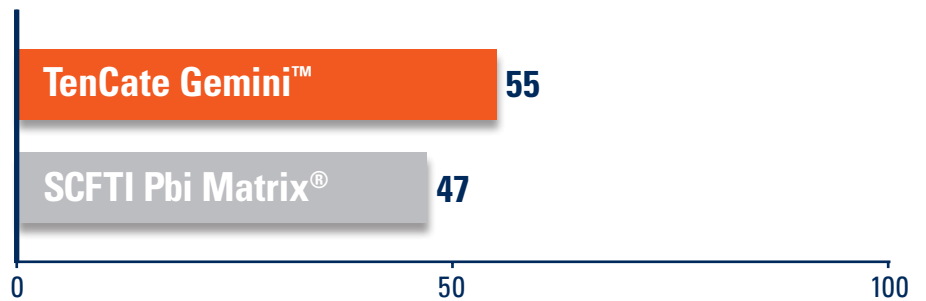
## Excellent Performance & Protection

TenCate Gemini™ combines the proven performance of Pbi with the advanced engineering expertise of TenCate. The thermal resistance of Pbi and Kevlar® spun yarns, reinforced with an enhanced Matrix® technology filament grid, provides the high performance you need.

The outer shell fabric is a firefighter's first line of defense in surviving a flash fire. The Thermal Protective Performance (TPP) Test is a laboratory procedure used by the NFPA to simulate flash fire exposures. The stronger the outer shell after thermal exposure, the less likely breakopen will occur. One method to test the strength of outer shell fabrics is Breaking Force, or Tensile Strength.

### TENSILE STRENGTH AFTER TPP EXPOSURE

Outer Shell Fabrics After a 17.5 Second TPP Exposure



### TenCate Gemini with Matrix® versus SCFTI Pbi Matrix®

Shown above are tensile strength values of TenCate Gemini™ and SCFTI Pbi Matrix® after being exposed to a 17.5 second TPP exposure (2 cal/cm<sup>2</sup>). TenCate Gemini has higher tensile strength than SCFTI Pbi Matrix after exposure, showing better thermal protection for a firefighter. TenCate Gemini is also significantly more abrasion resistant, exhibiting superior durability compared to SCFTI Pbi Matrix.

- FIBER BLEND:** 60% Kevlar®  
 40% Pbi reinforced with  
 Para-Aramid filament networks
- WEIGHT:** 7.5 oz (sq yd)
- WEAVE:** Modified plain
- COLORS:** Natural (Gold), Black
- FINISH:** Super Shelltite™
- END USE:** Turnout Gear Outer Shells

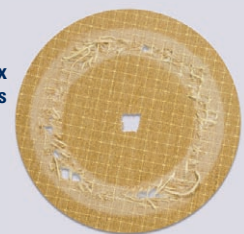
### TABER ABRASION PERFORMANCE After Taber Abrasion Test

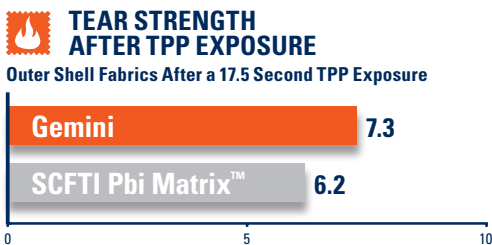
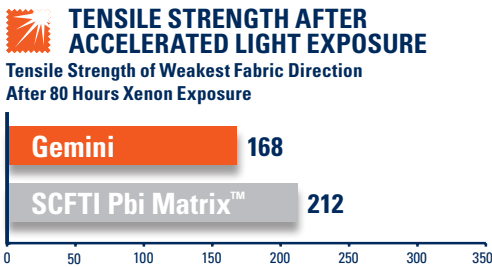
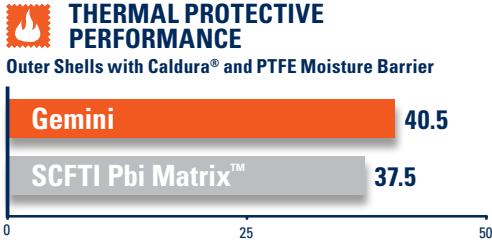
**7 TIMES  
 THE RESISTANCE!**

TenCate Gemini  
 5,500 cycles



SCFTI Pbi Matrix  
 750 cycles





PHYSICAL PROPERTIES	TenCate Gemini™	NFPA 1971 Requirements
<b>Trapezoidal Tear Strength (lbs)</b> <b>ASTM D 5587*</b> Initial (warp x fill) After 5 launderings (warp x fill)	45 x 45 35 x 35	22.0 min
<b>Tensile Strength (lbs)</b> <b>ASTM D 5034</b> Initial (warp x fill) After 10 launderings (warp x fill)	290 x 260 230 x 220	140.0 min
<b>Tensile Strength (lbs) after 17.5-second TPP Exposure</b> (2.0 cal/cm2 • sec) (warp x fill)	75 x 50	
<b>Water Absorption Resistance (%)</b> <b>AATCC 42</b> Initial After 5 launderings	< 1.0 < 10.0	30.0 max
<b>Flame Resistance</b> <b>ASTM D 6413</b> Char Length in inches (warp x fill) (Initial) Char Length in inches (warp x fill) (After 5 launderings) After Flame in seconds (warp x fill)	0.2 x 0.2 0.2 x 0.2 0.0 x 0.0	4.0 max 2.0 max
<b>Laundry Shrinkage (%)</b> <b>AATCC 135</b> After 5 launderings (cotton sturdy cycle) (warp x fill)	< 3.5 x < 2.5	5.0 max
<b>Heat and Thermal Shrinkage (%)</b> <b>NFPA 1971</b> 500°F for 5 minutes After 5 launderings	< 1.5 < 2.0	10.0 max

\*NFPA 1971-2007 specifies Trapezoidal Tear Strength measurement according to ASTM D5587 not allowing for specimen slippage.

**Advanced engineering** – Gemini™ features a patented high tech grid of composite filament & spun yarns and Matrix™ technology that provides strength, reduces abrasion and eliminates puckering.

**Superior durability** – 5-7 times better abrasion resistance than competitive Pbi fabrics.

**Excellent thermal protection** – Strong and flexible before and after thermal exposure.

**Peak Performance System™** – Gemini is a component of the TenCate Peak Performance System.

TenCate Gemini™ delivers peace of mind when lives are on the line.

