

# Nomex<sup>®</sup> Nano

Next generation of firefighter protection

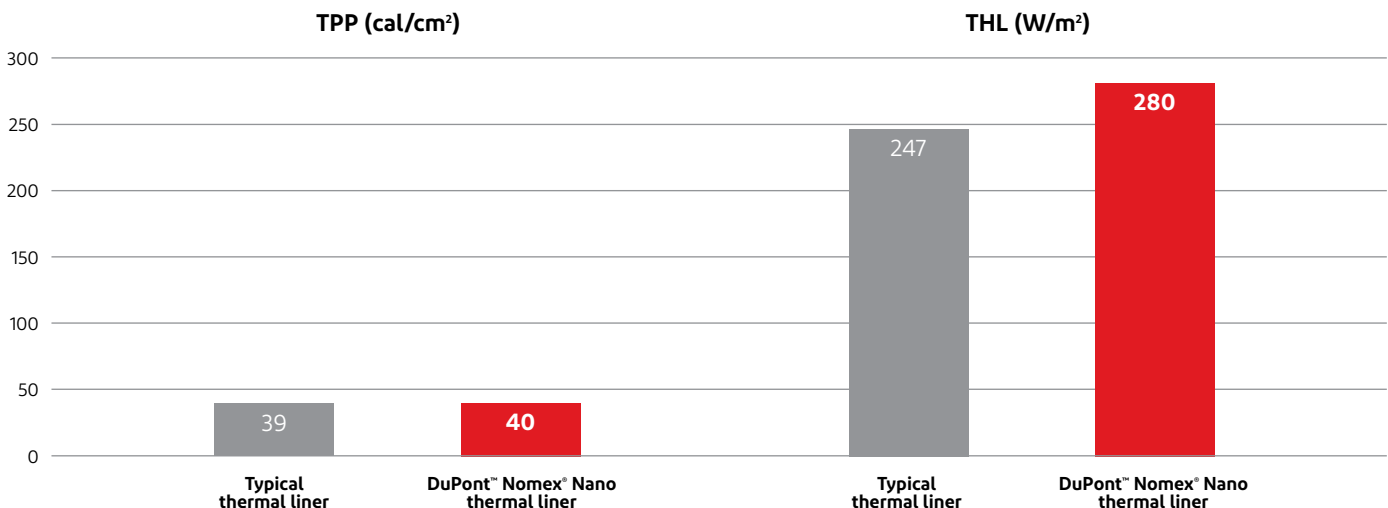
From reducing the risk of heat stress to decreasing the bulk and weight of turnout gear, DuPont™ Nomex<sup>®</sup> Nano is redefining thermal liner performance. In addition to providing the best balance of protection, comfort and mobility, Nomex<sup>®</sup> Nano has no fluorinated chemicals intentionally added and is OEKO-TEX<sup>®</sup> certified.

Based on the Nomex<sup>®</sup> brand that has been trusted by firefighters around the world for more than 50 years, Nomex<sup>®</sup> Nano represents the next generation of flame-resistant (FR) solutions from DuPont. It was developed to address the growing problem of heat stress, which is now the cause of more firefighter injuries than any other single factor.

Nomex<sup>®</sup> Nano is a non-woven technology that helps deliver particulate blocking. It is engineered to be thinner than other advanced FR materials used for thermal liners. In fact, Nomex<sup>®</sup> Nano may provide up to a 40% reduction in thermal liner thickness compared to other advanced liners available today while providing similar thermal protection performance (TPP).

That means that, if correctly specified, a thermal liner of Nomex<sup>®</sup> Nano will reduce the weight and bulk of current turnout gear

## Nomex<sup>®</sup> Nano brings increased thermal protection while increasing breathability\*



\*NFPA 1971 Standard



Thin and lightweight



Breathable



Reduces heat stress



No fluorinated chemicals intentionally added

systems, helping to give firefighters increased mobility and better range of motion.

What's more, Nomex<sup>®</sup> Nano features improved total heat loss (THL) compared to typical thermal liners with similar TPP, which helps reduce heat stress. (A typical thermal liner includes 1 layer of E89 2.3 oz, 1 layer of E89 1.5 oz and 1 layer of facecloth.)

Another way that Nomex<sup>®</sup> Nano can help reduce heat stress is due to its superior moisture management. In laboratory tests comparing moisture absorption, the thermal liner made of Nomex<sup>®</sup> Nano showed almost 3X higher absorption rate and 2X higher evaporation rate compared to conventional thermal liners—with up to 2X faster drying rates.

The bottom line? The next generation of firefighter protection is here with Nomex<sup>®</sup> Nano technology.

## Typical properties of Nomex® Nano

Property*	DuPont™ Nomex® Nano
Basis weight	0.6 oz/yd <sup>2</sup>
	20 g/m <sup>2</sup>
Thickness	5.9 mil
	150 micron
Air permeability	21 cfm
	6.4 m <sup>3</sup> /m <sup>2</sup> /min
Total heat loss (THL)	280 W/m <sup>2</sup> **
Thermal protection performance (TPP)	40 cal/cm <sup>2</sup> **
Limiting oxygen index (LOI)	40
Laundry durability (number of washes)	>25

\*Properties are nominal targets.

\*\*For turnout gear (TOG) composites made of Gemini® outer shell, CROSSTECH® black moisture barrier and thermal liner made with Nomex® Nano.

## Nomex® Nano thermal moisture management

Absorption properties	DuPont™ Nomex® Nano thermal liner	Typical thermal liner
Dry weight (g)	1.37	1.64
Wet weight (g)	2.65	4.82
Absorption time (min)	0.55	1.41
Absorption capacity (g)	1.28	3.18
Absorption rate (g/min)	2.15	0.72
Moisture lost by evaporation (% of total absorbed during test)	43%	23%



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