



NOMEX® NANO FLEX LAMINATES

Dedicated to high performance protection gears

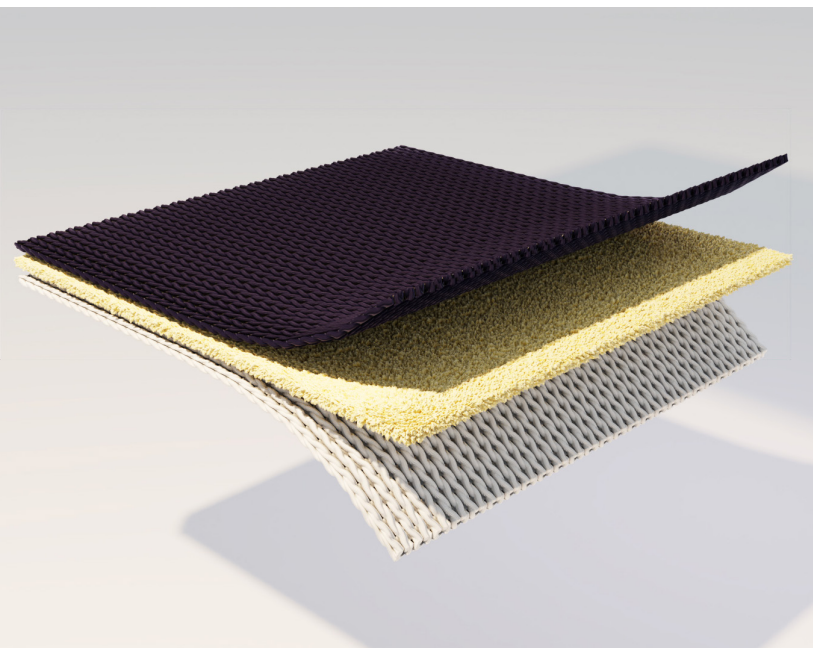
ALPEX in a few words:

ALPEX Protection is a medium-size manufacturing company located in Saint-Chamond, in the Loire Department, South-east of France. ALPEX is a specialist of technical textiles, with a dedicated range of waterproof and breathable fabrics for protective gears. It currently employs 45 people and has a yearly turnover of about 20 MUS\$.

More information on request at communication@alpex.fr

Why a new range of Laminates?

Several surveys conducted within the **firefighters** population showed that regular exposures to smokes and particles increased the risk of cancers and of respiratory diseases. The addition of Nomex® Nano Flex to a firefighter hood composite structure provides **improved particle barrier protection** in the neckline and upper jaw area that historically are known to be the most vulnerable and least protected. A specific range of Nomex® Nano Flex laminates was thus developed and aims to **enhance protection without compromising with comfort**.



What are the Nomex® Nano Flex Laminates?

These are **technical textiles** made of 3 layers: An outer shell, with very **high thermal, flame and heat resistance performances**, mostly containing Nomex® fibers. A middle layer, core of the **innovation**, that could be described as a very thin microporous membrane, made of nano-fibers. Thanks to its extremely low density and its very high elongation, this membrane does not interfere with **wearing comfort**. A third layer, also with thermal properties, **enhancing moisture transfer**.

This **optimized composite structure** is **soft, light, very comfortable (stretch) and highly durable** (tested up to 100 washes). It is up to 50 times more breathable than the usual membranes, while it achieves **more than 99% filtration efficiency** along the usual norms/test methods (particles, fine particles, virus of bacteria). The specifically developed bonding technology prevents the composite from generating any rubbing or crackling noises, **increasing the situation awareness**, a key safety parameter for the firefighters.

Who is using particles blocking hoods made with Nomex® Nano Flex Laminates?

After several years of development, Nomex® Nano Flex Laminates were introduced in 2019-2020. The most famous firefighters brigades world-wide are currently running tests or already switched to this highly innovative material.



An investment for immediate and long term Safety.

Long development periods, heavy testing programs as well as significant manufacturing investments are compulsory to achieve such an innovative step, offering very high protection without compromising or scarifying comfort. The tested durability of these technical textiles is a key argument to consider such hoods as an investment for safety, immediate and long term, rather than a traditional expense for a Personal Protective Equipment. The range of Nomex® Nano Flex Laminates is already large, enabling for each one to find the adequate hood to match his budget.



More infos on Nomex® Nano Flex Laminates - Feel free to visit:

- Our youtube video, highlighting the difference of breathability/air permeability between a Nomex® Nano Flex laminates and a traditional particles-blocking barrier (in that case PTFE membrane).

<https://www.youtube.com/watch?v=sd62DvC1W3w>

- A 3-D video, briefly describing the construction and specific properties of that innovative range of materials.

- Various specific articles, posted on ou Facebook and Linkedin pages
- A specific printed brochure, with all technical data and charts/diagram about the announced performances, is available on simple request at: communication@alpex.fr