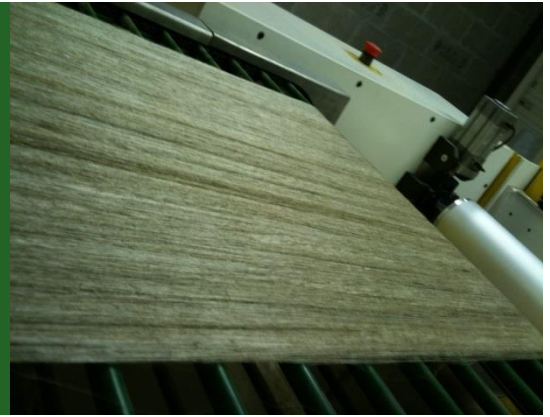


LINEO - FlaxTape®

the best flax reinforcement on the market, in terms of performance and price!



Case History

After 4 years of development, a unidirectional flax tape is now available on the market!

There is growing interest in the use of natural fibres as reinforcement for composites, driven by an increasing environmental awareness and governmental sustainability policy and regulations.

Despite the extensive research and development activities around the world in the last two decades, current natural fibre composite materials, which are mostly made from random mats, still cannot compete with glass fibre composites in terms of mechanical performance.

Good quality long fibres, such as those traditionally used by the textile industry, can be processed into yarns and fabrics by conventional textile processes for uses in highly directional reinforcements.

Because of the low mechanical properties of composites from nonwoven, researchers in recent years have been looking for highly aligned, yarn-based natural fibre reinforcement structures for the manufacture of composite components in load-bearing applications.

The Fabrics which are made from yarns, give very interesting properties. But their wettability is often difficult, because of twist and crimp. It is the reason why, Lineo had developed a treatment for the fabrics to improve their wettability. With this patented process Lineo offers 2 ranges of flax fabrics FlaxPly and FlaxPreg. With these products Lineo takes the place of leader in supplying flax reinforcements for sports and leisure industry.



! Tennis racket made with FlaxPreg

“With the FlaxPly and the FlaxPreg, we showed that flax fibre reinforcements have a real interest in the world of composite. But compared to glass fibre reinforcements flax fabrics are too expensive, to have a chance to gain other markets like transports, it was necessary to go further, do better... With the FlaxTape® we succeeded!”

François Vanfleteren, Lineo CEO

• Applications:

- Sport and leisure
- Automotive
- Railway
- Aeronautic
- Nautism
- Furniture
- Musical instruments
- etc ...

• Advantages for users:

- Damping properties
- Mechanical properties close to glass fibre
- Flax Fibre is lighter than carbon or glass
- FlaxTape is the lightest Flax reinforcement available from 50g/sqm to 200g/sqm
- Can be used alone, or with conventional fibers such as carbon, glass, aramid or basalt
- Convenient with the most of composites processes
- Convenient with the most of the resins thermoset or thermoplastic.

• Key features:

- Eco-friendly
- competitive price

Please visit our website :
<http://flaxtape.com>



Case History

FlaxTape© is the best flax reinforcement on the market, in terms of performance and price!

"We found that low environmental impact is not the only advantage of flax fibers. Their intrinsic technical properties can also make significant contributions to improve the performance of the finished product."

Francois Vanfleteren, Lineo CEO



III FlaxTape on the production line

"The FlaxTape© reinforcement allows to exploit all the potential of the flax fibre!"

Joris BAETS, KU Leuven



IV Instrument made with FlaxTape

Even if with the FlaxPly and the FlaxPreg we can compete with glass reinforcements, to gain markets like transports, there is still a major problem: the price.

The cost of yarn production is prohibitive. The manufacture of a yarn involves processing steps. For example, the production of a conventional flax yarn usually requires scutching, hackling, four to six passes of drawing and the final spinning operations. The cost of the final spinning operation alone typically accounts about half of the total cost of the whole fibre to yarn process. The weaving of yarns into a fabric is another labour intensive and costly process, involving warp preparation, threading, weft preparation and weaving.

Significant cost savings can be realized if a highly aligned reinforcement structure can be produced without involving the expensive spinning and weaving operation.

Lineo worked to find processes for converting fibres directly into a unidirectional nonwoven tape that can compete with unidirectional yarns and woven fabrics in final composite mechanical performance.

After 4 years of development, the FlaxTape© is now available on the market!



II Sandwich panel made with FlaxTape

The FlaxTape© is a tape of unidirectional natural flax fibers, this reinforcement offer many advantages because it is produced without involving the spinning and weaving operations: FlaxTape© don't need treatment to improve wettability because its wettability is very good, it is entirely bio-sourced and presents no risk to the handling or use contrary to other materials commonly used in the composite industry; FlaxTape© is a flat product and needs less resin than other traditional products;

The price of FlaxTape© is competitive! Another lock is released with the FlaxTape©, in fact, it is almost impossible to produce a flax fabric lighter than 150 g/m² but with the FlaxTape Lineo can produce very light reinforcement down to 50 g/m²!

Right now Lineo offers FlaxTape© 50; 70; 110 and 200 g/m².

Lineo realized tests on the FlaxTape© and the results are fantastic! The FlaxTape© is convenient for the most of the composites processes and the most of the resins.

According to KU Leuven research laboratory results, with the FlaxTape© we use the maximum of the properties of the flax fibre!

Lineo is very proud to announce that the FlaxTape© is the best flax reinforcement on the market, in terms of performance and price!

