



...we finally succeeded in trapping the air and keeping it stable, by creating a sort of cushion between our body and the outside ...

Lightex is owned by:



INTRODUCTION

Lightex is an innovative product that is used to position and retain the air on a textile; as a matter of fact, air is the best and lightest thermo insulator.

Lightex allows a fabric to become thermo insulated with very high thermal endurance values, almost without increasing the original weight. Furthermore Lightex is windproof, waterproof, transpiring and, if microperforated and if enough layers are used, it becomes floatable.

It is worth noticing that all other well-known fibers present in the textile market, offer a very low thermal endurance when compared to the values that Lightex offers.

Lightex, thanks to the incorporated micro-air-cells can guarantee high thermal insulation performances: this means that any light fabric if combined with Lightex will have the same or even greater thermal insulation as the "heavy" clothes produced in the market made by synthetic or proteic fibers. Clothes will then be lighter, more comfortable and with a higher performance.

If we take as an example, outdoor clothes for climbing: they are realised with heavy materials, not completely waterproof. They are therefore quite uncomfortable to use for sports as they limit motion.

Lightex allows to manufacture clothes for outside and extreme sports: a jackets for instance, will be extremely warm, waterproof and very light in order to increase performance.

TECHNICAL CHARACTERISTICS

The thermal resistance mean value of Lighttex 0,5 mm thick is 0,055 m²K/W-RCT equivalent to 0,355 CLO (1 CLO=0,155RCT-m²K/W).

It is clear that Lighttex 0,5 mm thick has the same thermal resistance as heavy clothes such as jackets, flannel shirts etc. Furthermore, Lighttex heat and thermal insulation performances increase with temperatures up to -25°.

The thermal resistance of a material results directly from the combination of radiant, conductive and convective heat and its value depends on the contribution of each to the total heat transfer.

For what concerns thermal insulation it is enough to compare Lighttex performances with all the other products which are advertised for the similar qualities and characteristics.

We could for example compare Lighttex with Thinsulate (3M art. C/40) which is 4 mm thick and has an RCT = 0,12 and a CLO of 0,775.

Since heat loss is influenced by the thickness of insulation and since the various CLOs add together, if you add up the CLO values of each component, you could approximate the total value: (3M Thinsulate Insulation-Physics of Insulating: <http://cms.3m.com/cms/US/en/2-147/crzuRFW/view.jhtml>).

Therefore, in order to have the same thermal resistance of the Thinsulate C/40 (4 mm), we would only need 3 layers of Lighttex (1,5 mm). Furthermore, given that Lighttex is an air cushion, and since air is the best thermal insulator, Lighttex is able to isolate the body keeping a constant temperature, protecting from both an extremely cold and an extremely hot weather. Lighttex is the only product in the market that keeps the body - or an environment - warm only when needed.

TECHNICAL DETAILS

Closed cells polyethylene

TECHNICAL PROPERTIES	STANDARD	UNIT	VALUE	MIN	MAX
Thickness	Int.	mm	0,5		
Density	Int.	kg/m ³	32		
Weight	Int.	g/m ²	16		
Thermal Conductivity	UNI EN 12667	W/m-K	0,04	0,03	0,065
Coefficient of steam diffusion resistency	UNI EN 12086	μ	>2000		
Water absorption (after 24 hours)	ASTMD570	%	0,80	0,40	15,00
Self extinction	Int.	mm/min	<100		
Buoyancy	UNI EN 395	N	63	15	150
Working temperature	Int.	°C	72		



















These technical details were found after various tests and technical analysis made by accredited laboratories within the company. These values only pertain to the technical characteristics of the expanded polyethylene and they might differ if the material is combined with other fabrics. Depending on the market, on the destination, on the utilisation of the final product and on the country where the product will be sold, the final users must take full responsibility in relation to the application or the use of the stated information, of which they must always check the final qualities and properties.

Lightex is a revolutionary, isolating material: its cellular structure is made of 97% air. It has isolating characteristics with all kind of energetic transfers, and has amazing possibilities to grant thermal features to the whole textile industry and more.

Lightex guarantees very high performances thanks to its physical characteristics: it is the only product in the market with all of the above mentioned properties, extremely thin, easy to handle, easy to apply, and with an extremely competitive price.

As a result of technological evolution, Lightex is a high tech material created after long and detailed studies on thermal isolation relative to the body temperature and to an "intelligent" thermoregulation.

SUMMARY

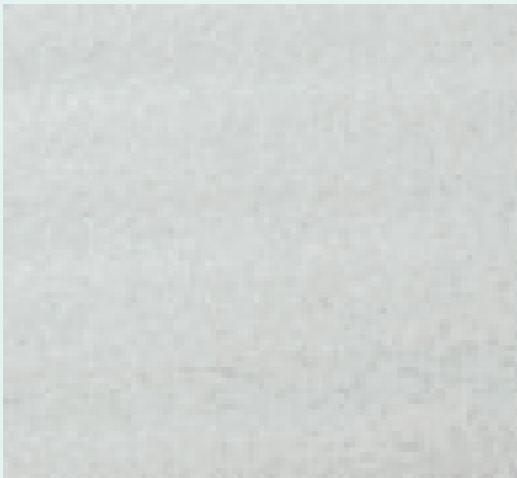
	1 square meter of Lightex is 0.5mm thick and weighs only 16 gram
	Lightex floats: 250 grams of Lightex allow a body weight of 130 kg to float
	Lightex is a thermal insulator and it has barrier against cold up to -25°C
	Melting point is above 90°C
	Lightex can be sewn and / or paired
	Lightex is water-resistant
	Lightex is windproof
	Lightex is flexible & breathable
	Thermal insulation = 0.4 K
	Lightex is harmless for health, hypo-allergenic and heat stable up to 90°C
	Lightex is self extinguishing when burning and it is recyclable
	Lightex's is extremely light due to its density of 0,025 grams per cm ³
	Lightex is 40 times lighter than water because it is structured by 97% of air
	Lightex has exceptional performances such as impermeability, excellent buoyancy values, ignitable and self-extinguishing properties, wind resistance, stain resistance which are the fundamental means for protection and safety
	Lightex has an outstanding thermal insulation 0.4 K
	One layer of Lightex 0,5 mm. thick has a thermal resistance of 0,355 CLO
	Lightex has a buoyancy value of 63 N
	Lightex has an exceptional price / quality ratio

APPEARANCE

Lightex has neutral color, but it is possible, depending on the needs, to produce it in different tones.

Here below some images:

Neutral color



Cells where the air is captured



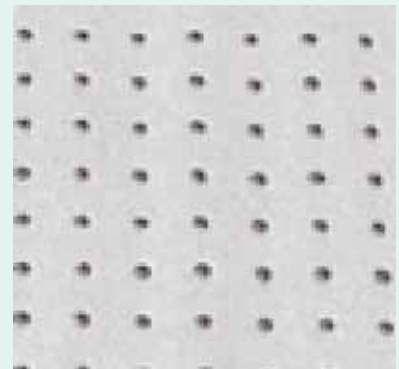
Micro-perforated water-proof/transpirable



Perforated in order to have more transpirability

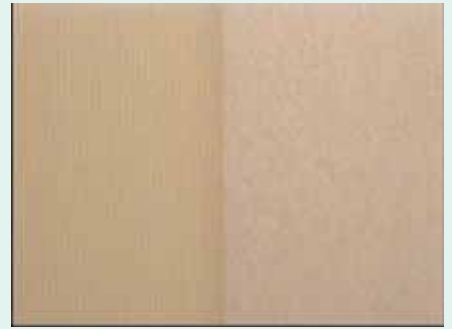


Perforated at 1,5 mm



COUPLING

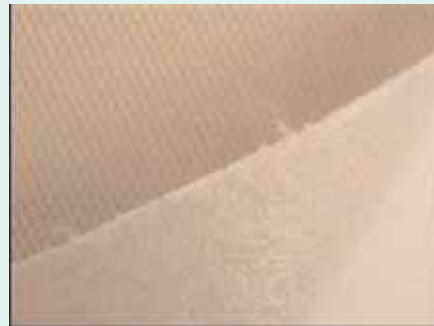
Glued pairings with different fabrics, where Lighttex is used as a non-conducting layer to increase the peculiarity of the materials used.



Two-sides pairings useful both for shoes and clothes.



Couplings with other fabrics for the clothing industry.



Two-sides embroidered couplings, without glue.

