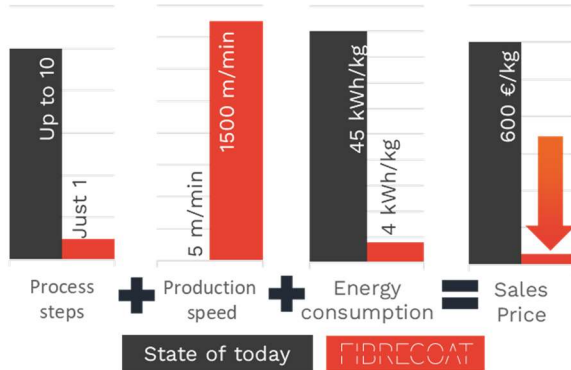


## AluCoat product briefing

### Introduction:

AluCoat is a multi-filament yarn consisting of individual basalt filaments with an aluminum coating. It is produced on standard glass and basalt fiber spinning lines. In these lines a coating module is added right below the fiber formation area enabling the coating of each individual filament with liquid aluminum.



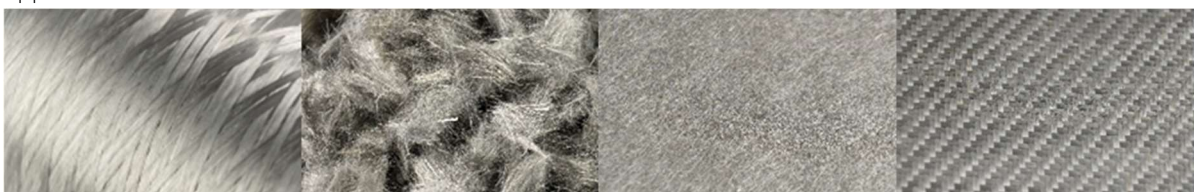
Because of the high speed of the process and low diameter, the fibers cool quickly, and a sizing can be applied in the process. The sizing can be adapted to meet different industry requirements, i.e., processability, adhesion, separation and many more. Subsequently the fibers are wound on to a bobbin for further processing. Both the spinning lines and the sizing formulations are handled by established industrial partners of FibreCoat. Using existing fiber spinning equipment and the high process speed, AluCoat reduces the price of conductive fiber solutions by at least 10 times.

### Properties:

The filaments spun with the FibreCoat process have a diameter of 23 µm and can be supplied in different yarn counts ranging from 30 to 600 tex. Higher yarn counts are possible as special order. The resulting yarns have high mechanical properties because of the basalt core as well as a high thermal and electrical conductivity due to the aluminum coating (see product data sheet). As all materials used in the production are non-flammable the material itself is fire resistant and heat resistant to 500 °C. Although AluCoat is a composite fiber, recycling is not a problem. The composition of the fibers is comparable to that of aluminum deposits found in nature. This means that the material can be fully recycled in standard industrial aluminum processing. Despite these advantageous properties, the material has typical yarn properties and is versatile in processing.

### Forms:

The AluCoat yarn can be used as a yarn for energy/data/signal transmission in similar fashion as cables. Furthermore, it can be stitched or placed on substrates to generate conductive paths. The yarn can be chopped into different fiber lengths for the use as short (i.e., injection molding) or long (i.e., LFT) fiber reinforcement, adding conductive and EMI shielding properties to the resulting parts. Due to its high flexibility, AluCoat can also be processed into various textiles. FibreCoat already developed different non-woven and woven fabrics. Soon these will be complemented by braided and knitted textiles. While every textile form comes with different properties, they can all cover a spectrum of properties on porosity, EMI shielding, heat conduction, anti-microbial and strength. In addition, these fabrics can be used in composites where the aforementioned properties are retained and applied. The aluminum surface of the fibers dyeable through anodization, making the fabrics and composites a viable material for design applications with a need for metal shine.



**Reach out to learn more!**