



Guidance and Advice on the use of Carpet Fibre in Equestrian Surfaces.

1st February 2021

The Production of... Sports Fibre™ - A Premium Blended Equestrian Surface Additive.

1. Introduction
2. Brand name
3. Manufacturing and processing
 - a. Input Material
 - b. Manufacturing and Packaging
 - c. Traceability Procedures
4. Environmental Regulations (certification)
5. Product Specifications
6. Synopsis

1. Introduction

The use of waste carpet being used in arena surfaces is due for change this year - 2021. In a move that has been welcomed by the industry the new Environment Agency ruling will see a set of regulated controls put in place. Proposed implementation 17th June 2021.

This paper has been prepared to offer clarity in the production of Sports Fibre™ and how a stringent set of rules and procedures has been implemented.

We will go into the details of the product, from the brand to its product specifications and how it can be incorporated into most sand based equestrian surfaces.

Our offices are available for any supplementary information and advice, our contact details are on the first page of this paper.

2. Brand name

Sports Fibre™. A trademark has been granted to the name of the product, distinguishing it from other products intended for the use as both a sand additive and in the production of premixed equestrian surfaces.

3. Manufacturing and processing

a) Input Material

It is imperative that the correct product composition is used in the processing and production of Sports Fibre™.

Sports Fibre™ is produced with the following components:

PA (or nylon) = Polyamide

PP (copolymer blend) = Polypropylene

Any change in these components or the blend percentages will effect the efficiency of the product.

The fibres that are used to produce Sports Fibre™ are the offcut fibres from textile companies. This implies that the fibres are unused, pre-consumer fibres. Fibrelok™ has therefore a very tight control on the quality of the raw material to produce Sports Fibre™.

Its suppliers are not waste collectors, but manufacturers of synthetic fibre products (e.g. carpet manufacturers) they themselves have a very strict quality and safety policy.

Fibrelok™ has a wide knowledge of both fibre production and blending since 2003, in producing the correct blend of both PA and PP fibres, the correct mechanical properties of Sports Fibre™ is achieved ie: (elasticity, root-structure, (im)permeability etc.)

Sports Fibre™ is not produced from PES (polyester) or PET (polyethylene terephthalate) fibres by choice. PES and PET are not suitable for the intended application. Their molecular structures increase the following,

- heat up with friction (hoof contact with the fibres)
- creates static electricity (especially with steel horse shoes, there have been cases recorded of riders experiencing an electrical shock (static discharge) when riding on PES fibre filled surfaces)

Sports Fibre™ is never produced using post-consumer textiles, post-consumer carpets etc, mainly due to the health and safety issues and traceability concerns. More on this subject in point 4.

b) Manufacturing and packaging

Fibrelok™ distances itself from similar products through quality control and compliance with health and environmental regulations.

The machinery that produces Sports Fibre™, is a process line, with five treatment steps. The purpose of the different steps is to separate the synthetic fibres from all non-synthetics, such as glue, latex, hessian, wool, cotton, fibre glass etc.

The identification of foreign materials and their separation from the PA and PP fibres is done mechanically, by a series of machines that have been designed for this purpose.

The cutting of the fibres to the desired length is carried out using mechanical cutters, the type which is used mainly in plastics recycling. These cutters have been adapted to produce the correct length of fibres that can be blended with the correct polyimides.



Sports Premix

Fibrelok Sports Premix has been meticulously developed to suit all disciplines and budgets. Our flagship sports fibres are blended with high grade silica sand to create a leading all-weather equestrian surface. Sports Premix has been designed for the more demanding applications, further additives are added to increase moisture retention and durability.

Fibrelok Sport has increased elasticity whilst maintaining excellent hoof grip and energy return.

High grade silica sand is blended with polyester, nylon and elastane fibres to create a high performance sure-footed surface.

Sports Fibre

Sports Fibre can be added to new or existing sand-based surfaces. This is a synthetic blended fibre that creates an artificial root structure, aids stability and moisture retention. Available in 300kg bales with a spread rate of 3.5kg per sqm.

Recommended for:
SHOW JUMPING, DRESSAGE, POLO, CARRIAGE DRIVING
and GENERAL SCHOOLING

FIBRELOK

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The last component in the processing line is a vertical bale press, especially designed and built for the packaging process.

The packaging of Sports Fibre™ is a PP woven tissue, that is UV resistant and impermeable. One bale of Sports Fibre™ weighs on average 300 kgs. If put on a pallet, the bales can be stacked two high, making for ca. 600 kgs per pallet. A full articulated truck load of Sports Fibre™ bales holds ca. 22 MT of fibres.

The volume needed to get the best results with Sports Fibre™ is ca. 3 kg per m². This is variable by the quality of the sand, the depth of the sand, the frequency of use of the surface and the location of the arena (indoor, outdoor).



c) Traceability procedures

All supply of the raw material for producing Sports Fibre™ is weighed on a calibrated weigh bridge, checked for quality and then the batch number recorded.

The batch number has a coded key to :

- the material quality (PP, PA)
- the supplier of the material
- the precise time and date for that particular delivery

The batch number is completed when the material is processed with the codes for:

- the size of the 'cut' of the fibres
- the time and date of production of the product
- a unique number for each bale
- the weight of the bale

The batch number is recorded on the loading documents for every supply order to our customers.

All supplies of Sports Fibre™ are weighed and invoiced as soon as the weight is known. The loading lists, containing the batch numbers, are attached as a copy to the invoice that is sent to our customers.

Traceability of the material is the most definite of quality controls, but is also a Environmental requirement. Our customers can retrace the material to us, by the batch numbers. Fibrelok™ can retrace the supply of the raw material and the production date.



Any product or secondary raw material that is processed from 'waste', whether it be post-consumer or industrial waste, must comply with certain rules and regulations.

These regulations are issued by the Environmental Agency. Companies, such as Fibrelok™ or other recyclers, that produce products and secondary raw materials out of waste, are obliged by law to have an Environmental Licence. This licence will hold limitations to volume, type of waste and methods of processing the waste.

Many products are often still considered waste. If you wish to use this material in your arena, you should possess an Environmental Waste licence. If you do not and you use this product (waste) in your arena, you are committing a criminal offence and are responsible for any potential 'clean up'.

Fibrelok™ has regular analyses taken of its products, so that any change in quality or composition of the material is detected early and be corrected immediately. Fibrelok™ also has a very clear understanding with its suppliers, any change in formula is detected prior to arriving at their premises.

Products should always be tested by a laboratory in order to make sure that there are no traces of toxins (e.g. glue, latex), fuels (e.g. used carpets), foreign materials (e.g. wood, glass, carboard, paper) or non-plastic textiles (e.g. cotton, jute, wool).

Fibrelok™ provides its customers with a certificate that confirms the status of the secondary raw material - Sports Fibre™. This certificate is accompanied by an official stamp of our company and a signature of its managing director.

5. Product Specification

See attachment 1: MSDS

Apart from the technical data included in the MSDS (material safety data sheet), we can provide information on the materials behaviour when used in a equestrian environment.

Sports Fibre™ patented weatherproof polypropylene (PP) is specifically designed for outdoor use and capable of withstanding extreme weather conditions. The temperature tolerance for Sports Fibre™ products is between the continuum of -30°C to 70°C, based on allowance for normal functionality of the surface. It is designed to facilitate effective water drain from the surface. Efficiency in water drainage ensures longer lifespan and prolongs the appealing appearance of your surface.

A surface with Sports Fibre™ is significantly more cost-effective than copied products, due to the almost unlimited life of the track profile and lower maintenance.

Sports Fibre™ technology provides greater surface uniformity and the action of the root-structure fibres provides a cushioning effect on impact, lowering the potential for injury.

From single horse owner to commercial application Sports Fibre™ has a proven history of offering the optimum in energy return and hoof support.

The compaction resistance provided by the inclusion of Sports Fibre™ into your surface will greatly improve the results of horse and rider.

Special attention must be given to dangers of 'hydrogels' or other Superabsorbent Polymers (SAP's). These are made from acrylic acid, which is irritating for eyes and nasal membranes and it will leach into the ground or surface waters, as it has a high water solubility.

Degradation is microbial for these superabsorbent polymers.

Example from an article on hydrogels :

Inhalation exposure of rats to 6000 ppm for 5 hours resulted in nose and eye irritation, respiratory difficulties, and unresponsiveness: death occurred in one animal with lung haemorrhage and degeneration of the liver and kidney tubules. Inhalation exposure of rats to 1500 ppm for 6-hours caused nasal discharge, lethargy, weight loss, and congested kidneys (ACGIH 1991; Guest et al. 1982).

According to the definition provided in the Federal Register (1992), acrylic acid is a volatile organic compound (VOC) substance. As a VOC, acrylic acid can contribute to the formation of photo-chemical smog in the presence of other VOCs.

EPA/OTHER FEDERAL AND OTHER GROUP ACTIVITY

The Clean Air Act Amendments of 1990 list acrylic acid as a hazardous air pollutant. NIOSH and the ACGIH have added a skin notation to their recommended workplace air exposure limits, indicating that workplace dermal exposure should be controlled as well.

6. Synopsis

Sports Fibre™ is a fully synthetic blended product, with a quality guarantee offered by the Fibrelok™ label. It is produced under strict procedures and guidelines with specific, purposely built machinery in an experienced environment.

Sports Fibre™ is produced with only the highest quality input materials available, filaments and fibres all manufactured from virgin grade products.

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