Natural fibers or natural fibres (see spelling differences) are fibers that are produced by plants, animals, and microorganisms that are used in the production of various materials or products. These fibers are extracted from various parts of plants, such as leaves, stems, and seeds, and are used in a wide range of applications, including textiles, paper, and building materials.

The earliest evidence of humans using fibers is the discovery of wool and dyed feathers, which were found at the prehistoric site of Qiimhuseet in Scotland. The use of fibers in the production of textiles dates back to at least 10,000 BC, with early humans weaving plant fibers to make clothing and tools.

In recent years, there has been a growing interest in using natural fibers as reinforcements in composites due to their lightweight, cost-effective, and environmentally friendly properties. Natural fiber composites are used in a variety of applications, including automotive, aerospace, and construction industries.

The reinforcing material can be made up of particles (e.g., minerals), sheets (e.g., exfoliated clay stacks), or fibers (e.g., natural fibers such as flax, hemp, and jute). The reinforcement phase(s) is typically an order of magnitude greater than for conventional composite materials.

The use of natural fibers as reinforcements in composites has grown in importance in recent years. Natural Fibre Composites | ScienceDirect

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Nanocomposites and long fiber–reinforced thermoplastics are commercially important examples that have begun to impact this market. Expanding the use of rather than small, added to 1% has more...