

Application of Natural Fibres in Terry Towel Manufacturing

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Abstract

Studies of woven fabric comfort properties have aroused the interest of researchers in recent years. Although studies on the structures of woven terry fabrics are rather limited, the study of the comfort properties these fabrics will reveal new approaches regarding the subject. Towels are the most used textile structures in water related usage of terry-woven fabrics. The users prefer that ready-made bathrobes and towels be comfortable and fresh, made of a light and soft structure, remain dry as they quickly transfer the water and sweat accumulated on the body, and be hygienic and naturally formed. Therefore comfort, an important property for the textile products, is also an important need for terry fabrics in water-related usage. However, the comfort properties of terry fabrics such as towels should be specific. The comfort parameters of air permeability, water vapour permeability, liquid transfer velocity, drying time, and water absorption will stand out in such products.

Cotton Fibers

Cotton fibres consist of the unicellular seed hairs of the bolls of the cotton plant, the Gossypium plant the chemical composition of typical cotton fiber is as follows: 94.0% of dry weight is cellulose, 1.3% is protein, 1.2% is pectic substance, 0.6% is wax, 1.2% is ash and 4% is other substances. Absorbency refers to a cotton fabric's ability to remove liquid water from the skin as in a towel. Cotton is hydrophilic; it wets easily, and can hold much more water than synthetic fibres can. Cotton releases a considerable amount of heat when absorbing moisture, but it dries slowly. It is not only the amount of water held that is most important, but the water held that is most important, but from the body. The size and distribution of the pores, and capillaries, between and within cotton fibres are uniquely suited for this purpose. Wet strength is one of the crucial properties required in towels, as they are most likely to remain wet as compared to other home textiles. Cotton is stable in water and its wet tenacity is higher than its dry tenacity. The toughness and initial modulus of cotton are lower compared to hemp fibres, whereas its flexibility and its elastic recovery are higher. Cotton is a natural fiber and considered hypoallergenic. This means cotton has a low tendency to cause allergic reactions. It also does not cause skin irritation and can be sterilized. The microbial resistance of cotton is low, but the fibres are highly resistant to moth and beetle damage. The microbial resistance can be improved by antimicrobial finishing. Cotton uses in the medical institutional area are well known for their hypoallergenic characteristic and sterilize- ability. Cotton fabrics are often recommended for persons having skin

allergies. Cotton sanitary products and cosmetic aids are promoted for their health benefits. Cotton towels, bedding and baby clothes have all been promoted on the basis of the hypoallergenic nature of cotton. Moreover cotton's resistance to high temperatures of water makes cotton easy to be cleaned as it can be boiled. Cotton fibres are the backbone of the Cotton fibres are the backbone of the It has the highest production and consumption figures among the other natural fibres. It has easy availability as it is grown in more than seventy countries of the world. One other reason cotton is used for toweling is it is the most economical fiber among the natural fibres Shorter staple cotton fibres are generally used in towels because fine yarn counts are not required. The cotton fibres which are used in towels have relatively low fiber length, relatively low fiber strength, relatively low maturity ratio. The Micronaire range can be said to be in the middle range

Bamboo fiber

Is a bamboo fiber as raw material, through careful design and multiple processing techniques to produce a set of health, environmental and aesthetic health in one of the new towels. Has become a focus on health, the pursuit of quality of life, increase consumer choice bit of fashion. Bamboo fiber terry towel features:

1. Bamboo fiber towel smooth, velvet has a unique sense of softness to the smooth skin of the most delicate care, skin care is doing my material of choice.
2. Cross-section of bamboo fiber towels covered with large and small oval-shaped pores, the height of the natural hollow cross-section so that it can absorb and evaporate in an instant a lot of water, called 'Fiber Queen.'
3. Bamboo contains a natural bactericidal components, it has antibacterial properties of mites. Textile products by the State Quality Supervision and Inspection Center for testing validation: the same number of bacteria under a microscope, bacteria in the cotton, wood fiber products can flourish, and bamboo fiber products, the bacteria killed in 24 hours after more than 80% antibacterial ability is unmatched by other textile materials.
4. Bamboo fiber has been completely defatted, desugared, removal of protein processing, to prevent the stains on the towels in the bamboo fiber residue.
5. Bamboo fiber has been completely defatted, desugared, removal of protein processing, to prevent the stains in the bamboo fiber towel chemical reaction, has a strong cleaning ability, quick and thorough decontamination. Bamboo fiber is six ten thousandths UV transmittance, ultraviolet transmittance of cotton, two thousand five hundred ten thousandths, UV resistance of bamboo fiber is made of cotton 4 ten 7 times.
6. Compendium of Material in the sterilization on the bamboo, clear and fire over 20 different medicinal functions and formulas of the elaborate, nearly a thousand species of bamboo folk prescription

Hemp fiber

Hemp fiber has been used extensively throughout history, with production climaxing soon after being introduced to the New World. Items ranging from rope, to fabrics, to industrial materials were made from hemp fiber. Hemp was often used to make sail canvas, and the word *canvas* derives from *cannabis*. Today, a modest hemp fabric industry exists, and hemp fibers can be used in clothing. Pure hemp has a texture similar to linen. Hemp fiber is one of the strongest and most durable of all natural textile fibers. Products made from hemp will outlast their competition by many years. Not only is hemp strong, but it also holds its shape, stretching less than any other natural fiber. This prevents hemp garments from stretching out or becoming distorted with use. Hemp may be known for its durability, but its comfort and style are second to none. The more hemp is used, the softer it gets. Hemp doesn't wear out, it wears in. Hemp is also naturally resistant to mold and ultraviolet light. Due to the porous nature of the fiber, hemp is more water absorbent, and will dye and retain its color better than any fabric including cotton.

This porous nature allows hemp to "breathe," so that it is cool in warm weather. Furthermore, air which is trapped in the fibers is warmed by the body, making hemp garments naturally warm in cooler weather. Hemp is an extremely fast growing crop, producing more fiber yield per acre than any other source. Hemp can produce 250% more fiber than cotton and 600% more fiber than flax using the same amount of land. The amount of land needed for obtaining equal yields of fiber place hemp at an advantage over other fibers. Hemp leaves the soil in excellent condition for any succeeding crop, especially when weeds may otherwise be troublesome. Where the ground permits, hemp's strong roots descend for three feet or more. The roots anchor and protect the soil from runoff, building and preserving topsoil and subsoil structures similar to those of forests. Moreover, hemp does not exhaust the soil. Hemp plants shed their leaves all through the growing season; adding rich organic matter to the topsoil and helping it retain moisture.

Wood fiber

Generally speaking, high-quality wood fiber has the following features:

1. Soft and pleasant and will not harden. High-quality wood fiber is generally used in North America the growth of pine as raw material, through special refining process. The cork pine and growth characteristics of a longer period, determines the grade of cellulose wood fiber contained the highest number of directly created a super-soft properties of wood fiber, its textile products made of super soft and does not become The outstanding characteristics of hard, long-term use until the discarded remains soft and pleasant time.
2. Row oil decontamination, cleaning no trace.
3. Super moisture absorption, comfort, and body care.
4. Anti-bacterium, comprehensive odor.

5. Summer and autumn breathable, warm in winter and spring.
6. superior flexibility and lasting security type: high-quality wood fiber with superior flexibility, thus creating their product freely adjustable elastic, a pull-Yi Che that is able to easily put on or take off, and can long maintain its bright outside type.
7. Good drape, and never compacted. High-quality wood fiber has a natural drape, thereby creating products Smoothness of its formation, long-term use of non-compacted, more close, beautiful and sexy.
8. High whiteness, spinning and strong.
9. Green environmental protection, natural health: high-quality wood fiber is a healthy type and environment-both natural plant cellulose fiber, textile products have a significant characteristics of healthy skin care.

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