

Improving the International Competitiveness of Textile Industry in China by Producing Ecological Textiles

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Abstract On the base of understanding the meaning of ecological textiles, this paper states the necessity of developing ecological textiles in China and states the function of the ecological textile authentications. By comparative analysis and according to the situation of textiles manufacturing in China, this paper puts forwards some practical suggestions on how to reach relevant ecological textile technical standards so as to produce ecological textiles of high quality to meet the consumers' demands for various kinds of healthful textiles and finally suggests that only producing ecological textiles, can the textile industry stand firmly in the world market.

Key words Ecological textiles; Eco-textile material; Cleaner production; Ecological textile authentications

1 Introduction

China has been the largest country in textile production and export in the world and the textile industry is playing a vital role in our national economy. The textiles made in China have long been famous for their excellent quality and reasonable price and occupied a larger market share in the world market. However, with the sharp increase in the world market prices, the textile industry in China is losing its competitive advantage. With the development of social economy and the progress of human civilization, people's environmental notions and green consumption consciousness are getting stronger and stronger and their demands for various kinds of textiles are becoming higher and higher. Furthermore, some Euramerican developed countries have successively established the related environmental laws and regulations and standards, which are used for safety testing for the imported textiles. To some extent, the environmental laws and regulations and standards have led to much pressure on the export of Chinese textiles. For examples, due to violation of lead paint standard, Chelsea & Scott Ltd in cooperation with Consumer Product Safety Commission (CPSC) conducted the product voluntary safety recall for the Sun Smarties™ board skirts on August 12th, 2008 with the result that consumers should stop using the recalled products immediately because the paint on the grommets of the skirts contains an excess level of lead, violating the federal lead paint standard. And in March 2009, L'Asessor brand scarves were refused by Finland Customs because the products contained azo dyes prohibited by EU. According to statistics, in the first three months of 2009, the EU conducted 55 recalled textile products, among which there are 39 items made in China, accounting for 70.9%. And the causes of recalls are mainly from risk of injury, choking hazard and chemical hazards. Therefore, to actively produce ecological textiles is the most efficient way to improve the competitive ability of textile industry in China.

Ecological textiles refer to the textiles which are made of raw materials which are harmless or a bit harmless to their surrounding environment and are harmless to the human body^[1]. As a new economic growth point in the textile industry, ecological textiles are undoubtedly playing an important role in expanding the international market shares. Oeko-Tex Standard 100, established by Oeko-Tex Association, is the first one to introduce the concept of ecological textiles, which requires that every part of the textile clothing products should pass the related testing and certification. And some developed countries will impose a ban on the unqualified textiles or restrict the imports of textiles so as to ensure the harmlessness of textiles.

From the respects of selecting raw materials, improving technological elements, carrying out cleaner production and promoting the Eco-textile Testing and Certification, this paper put forward some suggestions on the production of ecological textiles so as to improve the competitive ability of Chinese textiles in the world market.

2 Using Green Ecological Fibers

The most important step for producing ecological textiles is to choose the green ecological fibers. For many years cottons and ramies have become more and more popular for their comforts. However,

the cotton fabrics and ramie fabrics always contain some agriculture remnants because of the uses of pesticide during the process of growing, which does much damage to the ecological features of fabrics. To some extent, some of the agriculture remnants can cause skin allergy, respiratory diseases or even lead to cancer. In spite of the fact that the international market has a strict environmental requirement for the textile materials-pesticides containing toxic metal as well as DDT are not allowed, the problem of agriculture remnants still can not be solved radically.

After the implement of REACH regulation, the Eco-Design of Energy-using Products (EUP) has introduced 5 concrete measures in 2010. The EUP puts forward strict environmental requirements for the product life cycle from raw materials purchasing, manufacturing, packing, transporting, using to scrapping, which makes the manufacturers adopt advanced environment design technology to produce the energy using products. Furthermore, it is vital that the usage amount of some insurants be minimized in the product life cycle so as to reduce the damage to the environment. According to the EUP, EU will make out detailed environmental protection indexes. The products, not reaching the standard, whether produced in or our the EU, will not allowed to enter into the EU market. Some EU officials even stated that there would be 80% of the products from China. Undoubtedly, the EUP will bring heavy impact to the textile industry in China. Therefore, the uses of green ecological fibers are becoming more and more important.

At present, the natural fibers such as milk fiber, bamboo fiber, silkool, natural color cotton etc. are increasingly popular with the customers from the world market. Among them, the natural color has long been enjoying the reputation of "Plant Cashmere" and "Fiber Empress". During the planting process, no organic fertilizer or pesticide was used which could avoid the damage of chemicals to the environment. Owing to its natural color, the natural color cotton can be spun or weaved without any bleaching and dyeing so as to avoid chemical and metal ions remnants in the clothing, which can reduce the chemical material harm to human body. While the bamboo fiber, made from bamboos of high quality, is a kind of natural, green and environment-friendly textile material. Owing to its properties of natural antibacterial, ultraviolet ray resistance, moisture permeability, the bamboo fiber has long been known as a breathing eco-hometextile. With the use of green ecological fibers, there will be more and more healthful ecological textiles entering into the world market to meet the customers' demands.

3 Increasing Technology Contents

As a large textile producer and exporter, China has been playing a decisive role internationally for many years. Being a labor-intensive industry, textile industry is one of the traditional pillar industries in China. Owing to the excellent quality and reasonable prices, the textiles made in China have a larger market share in EU, USA as well as other countries and regions. However, with the continued development of industry scale of India, China textiles industry is losing its price advantage. In fact, China and India have been the most important competitors in the American market. Therefore, to keep the state of large country in textiles, the most important thing for the textile enterprises to do is to improve the product quality to enhance our competitive advantage, which depends on the use of high-tech.

At present, most of our textile enterprises belong to labor-intensive small and medium-sized enterprises. Due to lack of funds and talent shortage, such enterprises not only have no competitive strength to introduce advanced eco-textile technology and equipment from abroad but also have no abundant capital to the investment in the research and application of eco-textile technology. Therefore, most of our textile products are both at low level of technique and in technical additional value. To some extent, lack of the core technology of own intellectual property rights has become a major bottleneck for the textile enterprises to develop and produce the ecological fibers which is the main reason why our textile products frequently encounter green-ecological barriers. For instance, from Jan. to June 2009, RAPEX published 890 notifications covering the consumer goods with severe hazards, rising 28.06% year-on-year. Among them, 534 notifications to Chinese products exported to EU were published, up 44.72%. The products notified withdrew the market actively or passively and other products to enter into the EU market were directly declined by the customs.

In addition, owing to the global financial crisis, the US Economic Stimulus Package has put the purchasing of textile and clothing into the "Buy American" clause; while EU has put forward higher requirements for the name, label as well as other marks. Therefore, to increase the technology contents, strengthen technological innovation, improve product quality, and to promotes the additional value of products are the necessary way to enhance textiles competitive power and expand exports.

4 Carrying out Cleaner Production

Carrying out Cleaner Production is a precondition to produce ecological textiles. In 1996, UNEP redefined Cleaner Production as: “a new and creative way of thinking, concerning the production process of products. Cleaner Production means to continuously apply the environmental strategy of holistic prevention to the production process, products, and services in the hope of increasing ecological efficiency and decreasing human and environmental risks.”

As far as the textile products are concerned, Cleaner Production means to decrease and reduce the adverse effects in the whole life cycle from the use of raw materials to the ultimate disposal. As far as the production process is concerned, Cleaner Production means to save raw materials and energy sources, to eliminate the use of toxic raw materials, and to decrease the waste quantity and toxicity before releasing the waste in the production process. As far as the services are concerned, it requires bringing the environmental factors into the design and services offered.

In the long run, carrying out Cleaner Production not only is favorable to our environment but also can promote the sustainable development of textile industry and strengthen the competitive power of textiles in the international market. Taking Gunzetal Ltd. for example, the company is a leading worldwide supplier of high quality thread products to the apparel and non-apparel industry and has long been recognized as an innovative leader in the thread industry. Gunzetal has set its own environmental policy and is committed to conserve the environment and to treating natural resources with care and respect and is dedicated to being a leader in the area of environmental protection. Every employee of the Gunzetal Group is committed and responsible for achieving this mission as an integral part of their duties. During the process of manufacturing, all waste should be recycled or disposed of safely and responsibly. Furthermore, the company not only educates and motivates its employees to conduct their activities in an environmentally responsible manner but also communicates to all suppliers of their attitude towards the environment, encouraging them to implement similar policies of their own. In order to ensure all of its thread products adhere to the strictest humano-ecological requirements, Gunzetal is the first thread company in Asia to obtain the Oeko-Tex Standard 100 certificate product class I for baby articles published by the International Association for Research & Testing in the field of Textile Ecology. There for, it is carrying out the Cleaner Production that makes Gunzetal be the first-class supplier of high quality thread products.

Currently speaking, the mode of production of some of the textile enterprises is mainly characterized by high input and high consumption, which makes the enterprises be at the disadvantages to compete with other suppliers in the international trade. So it is vital that the Cleaner Production be carried out.

In recent years, in order to protect environment, we have taken some effective measures to carry out Cleaner Production. By using the dyes, paint additive and fabric finishing agent of non-toxicity, harmlessness which can be biodegraded, the potential hazards caused by the toxic and harmful substances such as Azo Dyes, heavy metal, free formaldehyde, and surfactant etc. can be avoided fundamentally. In addition, the raw materials have been paid more attention. For example, we are promoting the application of chitin fiber which is the only animal fiber in natural world. Meanwhile, the chitin fiber is the second largest fibrin besides cotton and is made from shrimp shell and crab shell, which can reduce the pollution of such wastes. Nowadays, the products made from chitin fiber are more and more popular with customers for the comfort and optimal health function in preventing skin disease, regulating blood lipid, reducing blood press, regulating blood sugar level as well as increasing immunity of human body.

In addition, during the process of manufacturing, energy conservation has become an important part in the process improvement. For instance, processing temperature was obviously slowed down during the process of desizing, boiling-out and bleaching so as to avoid the heat pollution and potential dangers caused by high temperature and high pressure. Through decreasing the alkalinity, the PH value has been transformed from strong alkaline to weak acid, which can greatly save sulfuric acid required in the process of neutralization.

Cleaner production is to improve the quality and function of products so as to reach the Oeko-Tex Standard 100. Besides, the environment will be well protected and the environmental awareness of textile industries will also be improved, which lays a solid foundation for the implementing of environment symbol.

5 Positively Passing the Ecological Textile Authentications

Ecological textiles have become the main part of international textile market. And the concepts of Ecological Textiles Standards and Green Environment have been increasingly noticed. The textiles with Eco-label are more and more popular in European market and in some developed countries, about 50% people prefer to buy green ecological clothes. In Germany there are over 80% people who first consider green factors. Therefore, the most important thing for textile enterprises to do is to improve the product quality and positively pass the Ecological Textile Authentications.

At present, the Ecological Textile Authentications commonly used in international trade are the EU Ecolabel and Oeko-Tex Standard 100, the Netherlands Stichting Milieukeur, the WhiteSwan by Northern Europe, the Toxproof by Germany etc^[2]. Among them, the EU Ecolabel criteria are based on studies which analyses the impact of the product or service on the environment throughout its life-cycle, starting from raw material extraction in the pre-production stage, through to production, distribution and disposal. The Ecolabel is used to encourage businesses to market products that are kinder to the environment. Products awarded the Ecolabel carry the flower logo, allowing consumers to identify them easily. Although the logo is simple, the environmental criteria behind it are very tough, and only the very best products, which are kindest to the environment, are entitled to carry the EU Ecolabel. What is more, it is a label that consumers can genuinely trust because the criteria are agreed at European level, following wide consultation with experts, and the label itself is only awarded after verification that the product meets these high environmental and performance standards.

While the Oeko-Tex Standard 100 was introduced at the beginning of the 1990s as a response to the needs of the general public for textiles which posed no risk to health^[3]. The standard is mainly used to asses the human ecological quality of textiles. For many consumers in target markets such as Europe, USA or Japan evidence that textile products are harmless to health is becoming an increasingly important factor when making a purchase decision.

Generally speaking, the Ecological Textile Authentications are now taking on the status similar to that of the brand names and are actively requested by consumers and certainly helpful to improve the quality of ecological textiles.

6 Conclusion

As a pillar industry of earning foreign exchange, the textile industry has been playing an important role in our national economy. With the development of social economic and the incensement of consumer awareness, people have more and more requirements for ecological textiles of high quality. Therefore, in order to keep stronger International Competitiveness and to improve the sustainable development of textile industry in China, the textile industry should pay more attention to the manufacturing of ecological textiles according to the ecological textile authentications commonly used in the world market. In the future, the textile industry should keep pace with the development of the world textile industry to get the latest technology and produce high quality textiles to make China become the real strongest textile country in the world.

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