

Topic № 6
TEXTILE MANAGEMENT,
MARKETING
AND SUSTAINABILITY

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Presentation by Eng. Ina Anastasova, PhD student in IP - BAS, Sofia,
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APPLICATION OF THE CHAIN OF CUSTODY IN THE TRANSFER OF WOOLEN RAW MATERIALS IN B2B TRANSACTIONS

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The certification process of wool fibrous raw materials and semi-finished products includes more and more standards and recommendations.

In the last 10 years, the main product standards of GOTS and the Textile Exchange - RWS (RAF) have been added to the Wool mark, WTO or British Wool regulations.

The core of these standards, which proves their practical application, is the Chain of Custody (CoC), as a general concept for the traceability system and the volume reconciliation of the transported materials.

In the spinning and weaving manufacturing of woollen materials, the fibrous raw are mixed and the mass balance model with the credit method of calculation is usually used.

The accuracy of the credit method is based on the announced system of equations, which aims at volume reconciliation between the supplier's output and the buyer's input in the successive transitions:

$$(1) \begin{cases} C_b = C_{bp} + (M_{in} * C_f) - M_o \\ C_b = C_{bp} + M_{in} - (M_o / C_f) \end{cases}$$

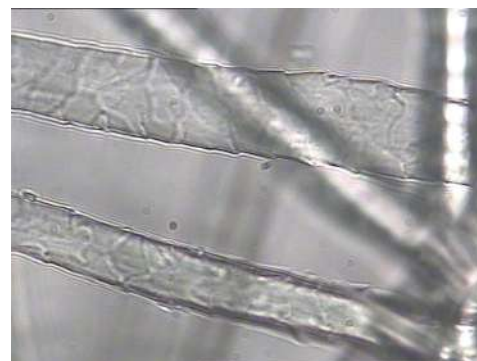
The principle of the credit method equalizes the weight of the output M_o with the weight of the input M_i through the correction of the conversion factor or randomness. The essential problem in the application of the mathematical apparatus consists in the missing strict definition of the weights.

In the general case, volume reconciliation is based on the specific methodologies allowed by the standards for each organization and the use of standardized weights. As far as the development of different calculation techniques is acceptable, there is no notion of standardized weight. The standard concepts of gross, net and condition weight are known.

Typically, and for convenience in transactions, net weight is applied, which is a function of the environment and varies. The discrepancy between the strict idea of the credit mass balance and the variety of mathematical expressions of net weight deprives the chain of custody of an objective mutually recognized basis. In essence, CoC, volume reconciliation and mass balance are interrelated forms of non-financial accounting.

The subject of this article is the mathematical apparatus of the credit mass balance of CoC for Woollen Materials. The goal is to develop a method for determining volume reconciliation and with available computer programs to find application in the daily certification process.

Keywords: textiles, product standards, CoC, mass balance



EFFECTIVE ORGANIZATION OF HANDWEAVING FOR MASS PRODUCTION

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Machine production of mass fabrics has sufficient capacity to over satisfy the world market.

The small and insignificant weakness of the factory organization consists in the maximum uniformity of the fabrics and the reduction of efficiency with the diversification of the assortment.

The essential disadvantage of industrial fabrics and textile products, in general, is the lack of individuality, even at the cost of the main quality compromise - unevenness.

Diametrically opposite is hand weaving: personal presence in the product, maximum variety and low productivity with acceptable quality.

Three interrelated factors affect the efficiency of hand weaving: the weaving equipment, the complexity of the fabric and the ergonomics of the loom.

Without weaving equipment from the obligatory auxiliary manual devices: warping frames, shuttles and bobbin winders, weaving practically cannot exist.

Fabric complexity, such as variety and colour patterns, has a predictable effect on performance. A complex contexture usually balances performance with the uniqueness of the product.

The essence of efficiency is based on the ergonomics of the handloom as a condition of the interaction between the weaver and the loom.



The ergonomics of the loom is a combination of technological possibilities and convenience for service and work. The optimal solution as a construction and assembling of the handloom should enable the execution of original fabrics with the maximum duration of a hand weaving session.

The present study is descriptive in nature. It is focussing on the transition between manufacturing and factory production.

Subject of this paper is the combined influence of auxiliary equipment, contexture and loom ergonomics on the efficiency of hand weaving.

The purpose of the development is to quantify the influence of each of the factors, and primarily – the weaver's modus operandi with the handloom.

Keywords: hand weaving, ergonomics, weaving productivity

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SOCIAL POLICIES IN PRODUCT STANDARDS FOR TEXTILE AND SEWING PRODUCTION

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Textile and sewing production support the largest labour resources compared to other industries. The main reason is due to the individual use of textiles and the anthropomorphic principle of spinning of the yarns and weaving of the fabrics. People want to dress differently from others and that their clothing radiates individual traits: modesty or expressiveness, modernity or tradition.

Despite the enormous evolution of textile technics, spinning, weaving and sewing necessarily require direct interaction between machine and man. The large collectives combined with the three-shift, continuous mode of production give rise to complex social and labour relations that define the environment in the textile industry. Supply chains, technological flows and the textile market are not only international but now transcontinental. This trend of globalization will develop and thus confirm the principle that textile is a collective work.

Except for textile farms and enterprises, there are generally sufficient normative documents that regulate socially fair labour conditions. The most comprehensive are the 10 principles of the UN Global Compact for Human Rights and Fair Work. The social group of the 17 goals of sustainable development has local European significance.

Two standards are of practical importance: SA 8000 for socially fair labour conditions and ISO 45001 for safe and healthy labour conditions. These standards are mandatory implemented in enterprises. For their application, the organization / enterprise provides the necessary resources: personnel and material. These standards form an independent direction in the management of corporate activity.

At the same time, a large number of product standards: GOTS, GRS, Better Cotton, etc., have entire chapters and clauses dedicated to the social policy in enterprises. To a large extent, the social requirements in the product standards are the same or similar to the texts in the basic social standards. Instead of focusing on the chain of custody and technology side of sustainability, some product standards overlap with social ones and divert management resources.

Subject of the article is the matching of the socially oriented texts in the standards with production application in the textile and sewing industry.

The purpose of development is to identify redundant duplications and propose them to certification bodies for removal.

Keywords: textiles, product standards, social requirements

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