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**ADVANTAGES AND DISADVANTAGES OF THE
METHOD FOR TESTING OF THE TOTAL AND
RESIDUAL DEFORMATION OF STIFFENERS**
**ДОСТОИНСТВА И НЕДОСТАТКИ МЕТОДИКИ
ОПРЕДЕЛЕНИЯ ОБЩЕЙ И ОСТАТОЧНОЙ
ДЕФОРМАЦИИ ЗАДНИКА**

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Abstract. The article discusses the current method for determining the total and residual deformation of stiffeners, which is used to determine the shape retention of footwear. It is shown that this technique has both positive and negative aspects. In particular, with its help it is impossible to determine the change in the shape retention of the footwear under static conditions. In addition, the design of the measuring device does not allow to reliably assess the shape retention of many types of fashion footwear. Thus, there is a need to develop new methods for assessing the shape retention of footwear.

Аннотация. В статье рассмотрена существующая на сегодняшний день методика определения общей и остаточной деформации задника, применяемая для определения формоустойчивости обуви. Показано, что данная методика имеет как положительные, так и отрицательные аспекты. В частности, с её помощью невозможно определить изменение формоустойчивости обуви в статических условиях. Кроме того, конструкция измерительного прибора не позволяет достоверно оценить формоустойчивость многих видов модельной обуви. Таким образом, существует необходимость в разработке новых методов оценки формоустойчивости обуви.

To evaluate of the shape retention of stiffeners, the technique is used regulated by GOST 9135-2004 "Footwear. Method for determination of total and residual deformation of toe puffs and stiffeners". For evaluation an instrument ZhNZO-2 is used. In footwear industry this technique has proven to be a relatively reliable method in certain cases for assessing the total and residual deformation of stiffeners. Due to measurements simplicity, the method is widely used to this day. However, because of the scientific and technological progress, in particular, due to the use of new materials for stiffeners, the advent of new methods of molding footwear, etc., the instrument ZhNZO-2 has become unsuitable for use in some situations:

- firstly, the device evaluates the shape retention of stiffeners only under static conditions, while most deformations can occur in the shoe during exploitation, that is, in dynamic conditions;
- secondly, the technique regulated by GOST 9135-2004 allows to measure the shape retention of stiffeners only in the final product and does not allow to evaluate this indicator for stiffeners and footwear blanks;
- thirdly, in some cases it is impossible to obtain an objective evaluation of the shape retention of stiffeners. This is because of the shape and dimensions of the standard inserts which are used for measurement, often do not correspond to the inner shape and dimensions of the modern models of stiffeners. These models are currently distinguished by a great variety. Also, it is not always possible to rigidly fix footwear with high tops. This leads to distortion of the test results;
- at fourth, the existing method does not make it possible to determine the magnitude of the force acting on the sample, and therefore it is not possible to compare the magnitude of the load and deformation of footwear of different models and designs;
- at fifth, the principle of loading is questionable, since the foot acts on the shoe statically or cyclically from the inside, and external loading is extremely rare.

The foregoing allows us to conclude that there is a need to develop new methods for evaluation the shape retention of stiffeners, footwear blanks, and final footwear not only under static, but also under dynamic conditions. These methods would make possible to compare the magnitude of the load and deformation of footwear of various models and designs.

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THE MECHATRONIC OF JACQUARD WOVEN MACHINE FOR QUALITY OF PRODUCTION

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Abstract. High-speed electronic Jacquard woven machine was recognized as a quality of production. It can easily produce any kind of pattern of woven fabrics, while the printing and dyeing cloth technology may produce wastewater, which hardly polluted the environment. A new electronic Jacquard technology has replaced the traditional printing and dyeing technology. A mechatronic control system must be researched to satisfy the high-speed Jacquard woven machine. This article introduced the mechatronic control system structure and the organization of the pattern data, tested the pattern data accuracy by feedback acquisition system, and used mechatronic electronic design automation technology implemented the production of the acquisition mechatronic system, emulated the time sequence accuracy by professional software,