

## TECHNOLOGY OF MATERIALS AND PRODUCTS OF THE TEXTILE AND LIGHT INDUSTRY

DOI: 10.32743/UniTech.2021.78.8-3.12120

### THE FORMATION OF CONSUMERS' AND TECHNICAL REQUIREMENTS FOR TEXTILE AUTO COMPONENTS

*Shazoda Ma'mirovna Esanova*

*Associate professor, Andijan Machine-Building Institute,  
Uzbekistan, Andijan*

*E-mail: [shmesanova@gmail.com](mailto:shmesanova@gmail.com)*

#### ABSTRACT

In the given article there were written the research on the technical and innovative textile products, innovative approach to the modernization and formation of textile which uses as an auto component in automotive industry, the analysis of the scientific works and literature review.

#### АННОТАЦИЯ

В данной статье рассмотрено исследования технических и инновационных текстильных изделий, инновационный подход к модернизации и формированию текстиля, который используется в качестве автомобильного компонента в автомобильной промышленности, анализ научных работ и обзор литературы.

**Keywords:** technical textile, standardization, technical requirements, auto components.

**Ключевые слова:** технический текстиль, стандартизация, технические требования, автокомпоненты.

The automotive industry in the world economy is the first among industries in terms of the scale of the use of resources - financial, material and labor. It has a great influence on the economic development of the country through: large consumption of material resources. For example, for the production of 1000 middle class cars, 620 tons of steel, 70 tons of cast iron, 50 tons of aluminum, 25 tons of copper

alloys, 80 tons of plastics, 72 tons of industrial rubber goods, 28 tons of car glass and textiles are needed.[1]

The modern automotive industry requires a wide variety of technical fabrics and nonwovens. The scope of their application is due to a set of special characteristics, the composition of raw materials and the type of material.



*Picture 1. The Volvo XC90 seats show how something perceived as a solid object turns out to be a complex construction with many parts to make [2]*

The interior of a car is the most attractive part any car owner wants to choose after the outer look of a car carefully. Indeed, the elegance of car upholstery adds to the value of a car that is why many car owners are interested in

the material used in producing their car seats. The various kinds of materials include nylon, leather, polyester, vinyl and faux materials. There are hybrids of the different car seat cover materials.

*Table 1.*

**Types of materials to car seats and their characteristics directed to consumers interest**

N	Types of materials	Characteristics
1	nylon	Nylon material is a universal seat fabric most cars come with because it is durable and affordable. Nylon seat material is even the added advantage nylon material has over other types of seat materials.
2	leather	The leather is the most expensive car seat material, but of course, it offers elegance, aesthetics, and value. Think of its softness, the feel and comfort from a leather seat; Most luxurious cars seats have leather materials.
3	polyester	This fabric is at the lower rung of the material ladder. The only purpose it serves is to provide a ready-made material for a cheap car seat needs. It is not comfortable because it lacks the feel and aesthetics of modern car seat preferences. However, many lower-end vehicles come with PVC fabrics to compliment the overall needs of the car and make it affordable for the generality of car enthusiasts.
4	vinyl	Vinyl is the preferred option for most car owners because it is easy to clean and maintain. It is available in varieties of color making it suitable for all types of vehicles whether for commercial or private use. The vinyl material is a durable and quality car seat fabric that can stand out among other materials.
5	faux materials	It most time looks like leather or suede, but they are just made to mimic them. Faux seat material is high quality and soft. One of the advantages it has is the price. Faux vinyl is a handy material for use when the customer need his car seat to look high class like leather, but can't afford the cost of a leather seat material. Faux material as the car seat is soft, elegant and comfortable. The material is easy to maintain and clean and especially the choice fabric for car owners with children and pets.

Products of this group must be manufactured in strict accordance with GOST or TU, because even a slight deviation in technology or raw material composition can affect its performance. Such accuracy is possible only at modern large enterprises with high technological equipment and multi-stage quality control.

There must be standardized technical requirements for textile auto components on the formation process:

1. General technical requirements;
2. materials must have color fastness in the group "strong" and "extra strong";
3. covers should fit tightly to the seats and fasteners, hooks, zippers should ensure fixation throughout the entire operation of the products;
4. Products in appearance, design, model, linear dimensions, quality of the canvas and manufacture must comply with the requirements of these technical conditions and the standard sample approved in accordance with

GOST 15.007 or the sample approved in accordance with the established procedure.

5. Dimensions, shapes, design, materials must correspond to the purpose, operating conditions, ensure the correct fit of the product, on the car seat and ease of use.

Depending on the production conditions and by agreement between the manufacturer and the consumer, it is allowed to manufacture:

- with or without various types, sizes, shapes and numbers and locations of pockets, zippers and protective pads;
- with fasteners and clamps on the seat of various types of structures and location;
- with emblems and signaling elements.

The norms of physical and hygienic indicators of the material for the manufacture of products must comply with the following indicators (Table 2):

*Table 2.*

**The norms of physical and hygienic indicators of the material for car seats**

N	Indicators	Quantity	Unit
1	hygroscopicity, not less	6	%
2	Breathability, not less	150	Dm <sup>3</sup> /m <sup>2</sup> *s
3	specific surface electrical resistance, not less	1014	Om

Seating, which occupies a significant part of the interior, is extremely important for designers. And for the driver, the seat is the main channel of physical communication with the car: a third of the body's surface is in contact with it. European studies show that the average car enthu-

siast spends about 22,000 hours in a car in his lifetime. Although these days very bad seats are rare, about 75% of drivers complain of back problems to one degree or another. Plus neck pain, poor circulation, premature fatigue ... The resulting loss of concentration is the cause of one third of serious road traffic accidents in Europe.

It is customary to evaluate the seats professionally twice. The primary perception is static, within literally the first 10-15 seconds after a person in the chair, like a buyer in a car dealership. Does it interfere with the planting process? How tough? Is it not crowding? Does it hold well? And most importantly, how are the reactive forces distributed from the pressure of the human body on the upholstery. In simple terms, what is the initial relief or "profile" of the seat.

Then, on a journey of at least an hour or two, an idea of dynamic comfort is formed. To all of these factors - and their perception of movement can change - is added how the seat dampens a wide range of vibrations. After all, not only the suspension is responsible for the smoothness of the car, but the triumvirate of tires, chassis and seats.

From a scientific point of view, this means that the frame, elastic elements, foam together and separately

should avoid resonances in the most unpleasant frequency range from four to eight hertz. Resonances at frequencies between 0.1 Hz and 0.6 Hz cause motion sickness.

The rejection of coiled spring frames made life much easier for people with a weak vestibular apparatus. The natural frequencies of modern seats are much higher. You cannot make them too hard so as not to transmit vibrations.

Scientific research on this topic began only in the 1940s, and it took two to three decades before the results had a noticeable effect on serial production, and not everywhere. But now there is no shortage of data, and no one seems to be working on a whim or by typing. Numerous studies sometimes even contradict each other. Including the most important thing - how the load from the body should be distributed over the seat.

#### References:

1. Тешабаев А.Э., Солиева Д.А. «Современный менеджмент качества: проблемы развития». Монография. Ташкент 2020
2. <https://www.google.com/url=https://www.drive.ru//>
3. В.В.Попова. «ИННОВАЦИОННЫЙ ТЕКСТИЛЬ. ПРИНЦИПЫ ФОРМООБРАЗОВАНИЯ» АВТОРЕФЕРАТ. МОСКВА 2017
4. ГОСТ – 15.007 Межгосударственный стандарт. Система разработки и постановки продукции на производство. Продукция легкой промышленности. Основные положения