

## **ANALYSIS OF DEFORMATION PROPERTIES OF TEA FABRICS WITH DIFFERENT SURFACE AND FIBROUS COMPOSITION**

**Mirzanazarova Dilbar Jamalovna,  
Khamrayeva Sanovar Atoyevna**

Tashkent Institute of Textile and Light Industry

**Abstract.** *The article shows that the composition of the fabric is 100% higher than that of polyester and single-layer bed fabrics, and the residual (plastic) deformation is lower than that of other bed fabrics with a support surface and fiber content.*

The mechanical properties of textile fabrics indicate their relationship to the effects of various forces. These forces can be different: they can be large or small, and can be provided one or more times. Forces can affect textile fabrics depending on their height, width or angle. As a result, "deformations of textile fabrics, bends, stretching, twisting, and so on" occur.

The forces affecting the tissue are not too great. Under the influence of this force, the "full extension" will consist of belts, elastic and plastic parts. The total elongation resulting from the elongation and parts thereof are referred to as uniform mechanical properties.

All parts of the "full elongation" appear and develop simultaneously with the effect of force on the tissue.

The strap is formed at high speed and slightly changes the external bonds depending on the viscosity of the fabric fibers.

The elastic part of the tissue is formed over a period of time, and under its influence the relationships in the tissue structure change.

The plastic part is associated with changes in the tissue that cannot occur again during its external and internal connections, and leads to a change in the structure of the tissues.

After the tissue is released from the force, the so-called relaxation return occurs in it. Belt lengthening is what's missing. After the elastic elongation is achieved, it gradually disappears. The elongation of fabrics on belts, elastic and plastic fabrics depends on the composition of the fibers and affects the fact that they do not contract, and the clothes retain their pattern.

Studies were carried out to identify deformation of single stretching of bed tissues with different base surface and different fibrous composition. For this, tissue

samples were taken with different base surfaces and with different fibrous composition, tested in the laboratory of its mechanical properties and the results obtained are given in Tables 1-3.

1-Table

Variation of single stretch deformation of tissues with arc surface and different fibrous composition

№	Description of indicators	Fibrous composition of bed linen with arc surface				
		100% polyester fiber	100% cotton fiber	Cotton yarn with 100% polyester fiber and arched yarn 50% cotton + 50% polyester fiber	Cotton yarn with 100% polyester fiber and arched yarn 60% cotton + 40% polyester fiber	100% polyester yarn, 70% cotton yarn + 30% polyester fiber
1.	Composition of strap deformation	0,68	0,51	0,62	0,52	0,55
2.	Composition of elastic deformation	0,20	0,25	0,22	0,27	0,30
3.	Composition of residual (plastic) deformation	0,12	0,24	0,16	0,21	0,15

2- Table

Variation of single-stretch deformation of single-layer fabrics with uniform surface and different fiber content

№	Description of indicators	Fibrous composition of bedding with equal surface				
		100% polyester fiber	100% cotton fiber	Cotton yarn with 100% polyester fiber and arched	Cotton yarn with 100% polyester fiber and arched	100% polyester yarn, 70% cotton yarn +

				yarn 50% cotton + 50% polyester fiber	yarn 60% cotton + 40% polyester fiber	30% polyester fiber	
1.	Composition of strap deformation	0,70	0,52	0,65	0,54	0,58	
2.	Composition of elastic deformation	0,20	0,28	0,21	0,28	0,29	
3.	Composition of residual (plastic) deformation	0,10	0,20	0,14	0,18	0,13	

3- Table

Change in single stretch strain of fabrics with different fiber contents and surface body

T/ p	Description of indicators	Fibrous composition of bedding fabric with surface surface					Fibrous composition of bedding fabric with surface surface
		100% polyester fiber	100% cotton fiber	Cotton yarn with 100% polyester fiber and arched yarn 50% cotton + 50%	Cotton yarn with 100% polyester fiber and arched yarn 60% cotton + 40%	100% polyester yarn, 70% cotton yarn + 30% polyester fiber	

				polyeste r fiber	polyeste r fiber		
1.	Compositio n of strap deformation	0,66	0,49	0,58	0,50	0,54	
2.	Compositio n of elastic deformation	0,22	0,25	0,24	0,28	0,29	
3.	Compositio n of residual (plastic) deformation	0,12	0,26	0,18	0,22	0,17	

Mechanical properties of bed fabrics with different basic surface and different fibrous composition are analyzed. In comparison with 100% indicators of polyester fabrics and fabrics with arc surface, 100% composition of belt deformation of cotton fiber fabrics decreased by 25.0%, composition of elastic deformation decreased by 20.0%, residual (plastic) deformation composition increased by 50.0%, yarn 100% polyester fiber and yarn 50% cotton + 50% polyester fiber fabric bedding belt deformation composition decreased by 8.8%, elastic deformation composition decreased by 9.1%, residual (plastic) strain composition increased by 25.0%, yarn 100% polyester fiber and yarn 60% cotton + 40% polyester fiber, fabric strap strain composition decreased by 23.5%, elastic strain was 26.0%, residual (plastic) with 42.9% increase in strain composition, 100% polyester yarn and 70% cotton 30% polyester yarn with 19.1% decrease in strain composition

In addition, the mechanical properties of bed fabrics with different base surfaces and different fibrous compositions were analyzed. Compared to 100% of polyester and monolayer bed fabrics, the 100% composition of strap deformation of cotton-fibrous bed fabrics decreased by 25.7%, elastic deformation was 28.6%, residual (plastic) deformation composition increased by 50.0%, yarn 100% polyester fiber and yarn 50% cotton + 50% polyester fiber fabric bedding belt deformation composition decreased by 7.1%, elastic deformation composition decreased by 4.8%, residual (plastic) deformation composition increased by 28.6%, yarn 100% cotton and yarn 50% cotton + 50% polyester-fiber fabric belt deformation decreased by 22.9%,

elastic deformation amounted to 28.6%, residual (plastic) strain composition increased by 44.4%, yarn 100% polyester fiber and yarn 60% cotton 40% polyester fiber,

At the same time, the mechanical properties of bed fabrics with different base surfaces and different fibrous composition were analyzed and the obtained test results were 100% in comparison with the indicators of polyester and cotton fabrics 100% on 25, the composition of transverse deformation of bed fabrics with cotton fiber decreased by 8%, elastic composition of deformation 12.0% ha, residual (plastic) deformation composition increased by 53.8%, 100% polyester yarn and 50% cotton yarn + 50% polyester fiber, belt fabric deformation composition decreased by 12.1%, elastic deformation amounted to 8.3%, residual. (plastic) the composition of deformation increased by 33.3%, yarn 100% polyester fiber and yarn 60% cotton + 40% polyester fiber, the composition of deformation of fabric straps decreased by 24.2%, the composition of elastic deformation - by 21.4%, residual. (plastic) strain composition increased by 44.6%, 100% polyester yarn with 70% cotton yarn 30% polyester yarn

Analysis of the obtained test results showed that, firstly, the content of fibers of 100% polyester fiber and single-layer fabrics with a single-layer surface is higher than that of other fabrics with a supporting surface and with a low content of residual (plastic) deformation to this Regulation.

### LITERATURE

1. Xamraeva S.A., Mirzanazarova D.J. Osnovi protsessa virabotki tkani s maksimalnoy stoykosti k istiraniyu. Monografiya, Tashkent, 2021., -186s.
2. Mirzanazarova D.J., Xamraeva S.A., Nazarova D.T. Vliyanie usadki na vozduxopronitsaemosti tkaney dlya postelnogo belya // Innovations in Texnology and Science Education. Scientific journal, 2022, p. 550-553. (05.00.00; IF )
3. . Mirzanazarova D.J., Xamraeva S.A., Nazarova D.T. Aralash tarkibli ip ishlab chiqarish uchun xomashyo tanlash // Prospects of Development of Science and Education. 2022. p.16-18. <https://www.researchgate.net> > ...
4. Taniberdiyev F.R., Uraimov S.Sh., Mirzanazarova D.J., Khamrayeva S.A. Analisis of Quality Indicators of Yarns With Mixed Composition // International Journal of Innovative Analuses and Emerging Technology. 2023. Vokume 2, Issue 2, p.6-10. (05.00.00; IF 7,225)
5. Khamrayeva S. , Mirzanazarova D., Nazarova D. Development of a New Blended Fabric on the RIFA-RFJW-10 Mashine and Performance Analysis. // E3S Web of Conferences 376, 02008 (2023), ERSME-2023. <https://doi.org/10.1051/3soon/202337602008>