



Analysis Of The Quality Of Seams For Joining Sewing And Knitted Products

Madixanova Nigora Saxibjanovna

Assistant, Andijan Machine-Building Institute, Andijan City, Uzbekistan

Sotvoldiyeva Nasibaxon Sohibjamol Qizi

Master, Andijan Machine-Building Institute, Andijan City, Uzbekistan

Copyright: Original content from this work may be used under the terms of the creative commons attributes 4.0 licence.

ABSTRACT

This article discusses the importance of seams when sewing clothes from knitted fabrics, defects that arise in them, shortcomings that can lead to defects in the process of wearing clothes. Bar charts also provide information on the types of stitches used in garment manufacturing and which of these stitches are used the most.

KEYWORDS

Knitted fabric, shrinkage of fabrics, elasticity, blooming, abrasion resistance, cutting, seams.

INTRODUCTION

Knitwear is the absolute leader in both women's and men's wardrobe. Uzbek manufacturers of knitwear produce it in a huge assortment, including everything from underwear to coats and warm jackets. T-shirts, sleeveless t-shirts, suits, dresses, pullovers,

sweaters and other items of clothing made of knitted fabric have long settled in Uzbek wardrobes and are not going to leave them in the foreseeable future.

High-quality jersey, sold wholesale and retail, is a highly demanded product. To expand the circle of buyers, manufacturers need to try, as competition in this market intensifies [1].

Before buying jerseys, you need to make sure of their quality so that they serve for a long time.

The performance of knitwear will depend on the type of weave used in its manufacture. In addition, the finish and the properties of the filaments in the yarn are important.

Another important point is the tensile strength of the knitted fabric. In the process of using knitted clothes, their repeated stretching is implied, which negatively affects the properties of the knitted fabric, up to tears and damage to the product.

Also, properties such as shrinkage of fabrics, elasticity, dissolving and abrasion resistance will affect the service life and reliability of knitted garments [2].

Thus, we can conclude that the main consumer qualities of any knitted clothing are comfort, strength and convenience.

But the quality of knitwear depends not only on this. The quality of the seams is also important.

The seams in knitwear are subject to stretching, abrasion, bending during wear and in most cases do not wear out, but break due to insufficient strength and extensibility [3,5].

The strength and elongation of the seams are influenced by the strength, quality and quantity of sewing threads (mainly needle

threads), the properties of the knitted fabric (weave, density, fiber type), as well as the direction of the seam in relation to the buttonhole posts. All this must be taken into account when choosing seams.

When sewing knitwear, the following seams are used: connecting, hemming, edging and finishing.

Connecting seams connect the parts of the products in such a way that the main sections of the parts are located in the product on both sides of the seam (connection of the front with the back, cuffs with sleeves, sleeves with the waist of the product, etc.).

Joining seams are the most common sewing and repairing knitwear.

According to the method of joining the parts, the connecting seams are divided into simple, overcasting, overcasting, overcasting, overcasting, stitching and set-in.

A simple connecting seam is made on lockstitch machines and is used to join two, three or more layers of knitwear. The width of the seam depends on its purpose and the properties of the knitted fabric and ranges from 1 to 3 mm.

This seam is used for sewing and stitching strips of products, sewing laces, sewing and sewing on a collar, sewing darts in products, sewing parts of regular knitted outerwear.

The overcasting connecting seam is performed on overcasting or stitching machines and is used to join two layers of knitwear, sometimes for sewing on cuffs, collars, etc., in top

knitwear in three to four layers. The overcasting seam is 2-4.5 mm wide.

The jerseys are sewn on overcasting machines with or without a knife mechanism. The width of the cut edges, depending on the type of knitwear, is usually set to 5-6 mm.

The connecting overcasting cover stitch is performed on a two-needle cover-stitching machine. Such a seam is used for sewing overlock seams, attaching gussets, collars, etc.

The joining seam is a kind of joining simple seam.

After joining on the front side, the details of the product are bent in the seam, while the seam is on the edge of the joint, and the details of the products are on the front side outward. This seam is made on shuttle seam machines.

A facing seam is used for sewing on a belt of underpants, stitching cuffs, etc. Sometimes, when performing a facing seam, the fold of one layer of jersey is slightly released (by 1 - 3 mm). Such a seam is called a piping seam. It is used for sewing the inlay to the sides of jackets, processing pockets, etc. The distance from the seam to the edge of the knitted fabric can be, depending on the style, within 1-2 mm.

Hemming seams are used for hemming product sections. They are subdivided into seams with a hem (closed cut) and without a hem (open cut) of a knitted fabric cut.

A seam without a fold in the cut of the knitted fabric inward is most often used for hemming the bottom of knitwear. This seam is performed on an overcasting machine (seam 1), on two-, three- and four-needle overlay

machines (seam 2), as well as on machines with a zigzag seam and shuttle.

If the hemming seam is performed on a two - thread overcasting machine, the cut of the product is folded in such a way that when the stitch is applied, the needle passes through the thickness of the folded knitwear without going out to the front side; the surplus of fabric when sewing is cut off with the knife of the overcasting machine. The hem width in finished products should not exceed 2 cm for underwear and 3 cm for outer knitwear.

When sewing knitwear on two-, three- and four-needle coverstitch machines, the open cut falls between parallel stitches and is covered with looper thread. Usually, when sewing on a machine, the product is placed face up, and its cut is folded to the wrong side. The hemming width of the overlock machine is the same as that of the double-strand overcasting machine.

A seam with a hem of the cut inward is performed on machines with a shuttle or zigzag stitch. A seam of this type is widely used for sewing light women's dresses, blouses, combinations, etc.

Sections of the product are also processed with hemming seams with simultaneous pulling of the rubber band.

From the data studied, it was found that connecting seams are mainly used in the manufacture of products from knitted fabrics.

A number of defects can occur when using other types of seams when sewing knitwear. For example, below are the defects that arise in the details of the product:



Picture 1. Seam defect

Unfinished seam - lack of connection of the cut of the product parts in the seam.

Uncaptured hinges - uncaptured, free-hanging loops that occur during kettle or self-folding.

Asymmetry of structural lines (elements) - the deviation of lines from the conditional line of symmetry in the arrangement of symmetrical structural lines (elements), including decorative ones.

Mismatch in the size of paired parts (parts) - paired parts (parts) of different length or width.

Mismatch of seams - displacement of longitudinal and transverse seams at their junction or relative to each other.

Seam crease - formation of unwanted fabric crease during sewing.

A thread break in a stitch is a flaw in the form of a violation of the integrity of the stitch.

Distinguishing sewing thread - a defect arising from the use of sewing threads, coloristically not matching the color of the reference sample.

Skip stitch is a loose thread in place of missing stitches.

Cutting - damage to the structure of the loops and the formation of small holes along the seam line of the product [4].

These defects lead to a deterioration in the quality of knitted garments. For this, it is necessary to study and analyze the causes of defects in the weld.

For example: Notching causes the knit to unravel near the seams or away from the seams along the buttonhole. The most dangerous is a hidden cut, since it is only revealed after washing the product. A clear cut occurs immediately during the manufacture of the product, and measures to eliminate it can be taken immediately. The reasons for the appearance of cutting depend on the sewing modes of products and the structure of the

knitted fabric. The main factors affecting the appearance of cutting and depending on the sewing modes of products include:

- The number of the used needle;
- The shape of the needle point;
- Quality of needle grinding;
- Pressure of the sewing machine foot on the fabric;
- The ratio between the needle diameter "and the diameter of the needle hole in the machine throat plate;
- The number of simultaneously connected layers of the canvas.

The main factors affecting the possibility of the appearance of a cut and depending on the structure of the canvas include:

- The density of the fabric and the type of weave;
- Fibrous composition and twist of the thread;
- The moisture content of the canvas;
- Types of finishing operations.

At the moment of piercing the material, the needle must overcome the resistance force of the material and the friction force T between the needle and the material.

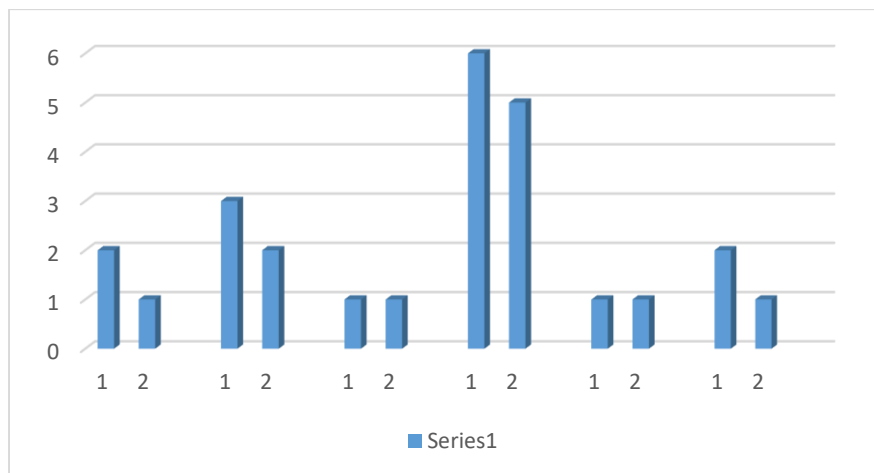


Figure 2. Bar graph comparing the stitches used for outerwear and underwear

The number 1 on the horizontal line of the bar graph indicates the top garment, and the number 2 indicates the garment.

Shown vertically: 1-Single-thread chain stitches, 2- Double-thread chain stitch, 3- flat, 4- edgestitch, 5- shuttle stitches, 6- combined stitches.

As you can see from this graph, overlock stitches are more commonly used in knitwear than regular chain stitches.

The most important requirement for the seams of knitwear is their extensibility. Extensibility should correspond to the deformations that the product experiences in the sock. It, like the

strength of the seam, depends on the type of stitch used and the type of knitwear.

To assess the endurance of the seam with repeated stretching along and across the line, a pulsator is used. The sample is taken with a size of 200X50 mm, with a seam, respectively, along and across the strip. The test mode is as follows: the elongation range is 1.5-5%, the pulsation frequency is 100 cycles per minute, the test duration is determined by the termination of the growth of permanent deformations or by the destruction of the sample.

REFERENSES

1. Flerova LN and other Technology of knitwear and sewing production.
2. Medium textbook specialist. educational establishments of the knitwear industry. M., "Light Industry", 1976. 352 p.
3. Galanina OP, Volman II Clothes from jersey. M., "Light Industry", 1967. 147 p.
4. M.N. Umarov. The influence of silk thread on the physical and mechanical properties of cotton silk fabrics. Universum: technical sciences.
5. <https://znaytovar.ru/new3567.html>
6. M.N. Umarova, N.N. Turakhuzhaeva. Study of the influence of the structure of knitted fabric on its properties. Universum: Engineering Sciences