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UDC 677.072.39

TECHNOLOGY OF PRODUCING THICK-AND-THIN FANCY YARN ON FLYER FRAME MACHINE

ТЕХНОЛОГИЯ ПОЛУЧЕНИЯ ПЕРЕСЛЕЖИСТОЙ ФАСОННОЙ ПРЯЖИ НА КОЛЬЦЕВОЙ ПРЯДИЛЬНОЙ МАШИНЕ

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Key words: fancy yarn, structural effects, thickening, thinning, volume effect, controlled speed mode control.

Ключевые слова. Фасонная пряжа, структурные эффекты, утолщение, утонение, эффект объемности, контролируемое управление скоростным режимом.

Abstract. The article considers a new technology of producing thick-and-thin fancy yarn on flyer frame machine. One of the most interesting and promising directions in the production of fancy yarn is the technology of thick-and-thin yarn. A thick-and-thin is the name of yarn with periodic or accidentally alternating thickening and thinning. The technology makes it possible to get a variety of color and structural effects.

Аннотация. В статье рассмотрена новая технология получения переслежистой фасонной пряжи на кольцевой прядильной машине. Одним из наиболее интересных и перспективных направлений в производстве фасонной пряжи является технология переслежистой пряжи. Переслежистой называется пряжа с периодически или случайно чередующимися утолщениями

и утонениями. Технология позволит получать фасонную пряжу с бесконечным разнообразием цветовых и структурных эффектов.

Thick-and-thin yarn is a type of yarn with periodical or accidental alternation of thickening and thinning areas.

At the spinning and knitting mills of the Republic of Belarus this type of yarn is not produced; at the same time, manufacturers from Turkey, Italy and other European countries produce a wide range of knitwear from thick-and-thin yarn. In addition, a number of manufacturers release specialized spinning equipment for yarn production due to the uneven stretching process of roving or tape [1].

This technology can be implemented at cotton and woolen spinning mills and allows to produce a variety of color and structural effects.

The problem that must be solved in the process of research is the control of the machine speed rate for producing structural effects in yarn. Obviously, the presence of elements of concentrated mass in places of thickening produces a significant distortion in even yarn when abrupt changes in density are very rare and considered as defects.

Naturally, thickenings in the fancy yarn impose their imprint on both the random tension characteristics experienced by the yarn and on the random characteristics of its strength.

In the educational institution "VSTU" a new technology was designed for producing thick-and-thin yarn, realized on a flyer frame machine for wool. The technology allows to get thick-and-thin yarn from two or more multicolored rovings, receiving various melange and structural effects. In the finished yarn, alternate sites with thickened and thinned areas of different colors. In knitted fabrics such yarn allows to receive a variety of external effects and give the product an effect of bulkiness.

The technology is implemented by upgrading the 3×3 drawing rollers for wool. Two rovings come through a sealer in a three-cylinder drawing roller. We control speeds of supply- and strap-pair with joined to them asynchronous motors with frequency converters. Due to the speed difference in delivery of supply and strap-pair, the use of different straps between the push and the feed roller, two rovings receive different stretching, which facilitates the production of thick-and-thin fancy yarn with different effects. This type of yarn is used for making fabrics and knitted cloth for garments.

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