

A study on the bandage production process of Bangladesh

Abstract

The aim of this paper is to study the bandage production process of Bangladesh. Bangladesh, a destiny of self-development and self-employment, where low price medicated textile product, Bandage has been producing near kakshiali river at Nolta in the kaligonj Upzilla of Satkhira district. All the process of bandages up to packaging is conducting by local manufacturer. This product has brought alight of employment for both men & women of Nolta. Women are directly involved in the manufacturing process in home whereas men are working at outside. This paper shows a simple and one of the cheapest manufacturing process of bandage.

Keywords: bandage, warp preparation, weft preparation, weaving process

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Introduction

The chief raw material for medical bandage production is bleached cotton gauge fabric of appropriate quality, compatible to IS-758/1925.¹ The width of fabric varieties from 2.5 to 15 cm and length from 3 to 4 meter.² The fabric which is used to make Medical Dressing is to be obtained from native marketplace.³

Generally yarn is purchased from Naryangonj ,the biggest market of lot mixed yarn in cone package form.⁴ Normally 30^s,24^s PC (90%polyester &10%cotton) yarn or 100% cotton yarn of similar count are used for producing bandage.⁵ Figure 1 shows the yarn storage area.



Figure 1 Yarn storage area.

Surgical bandage manufacture task can be originated on a small scale with reasonable venture.⁶ The mandate for Surgical Bandage is seen all throughout the year.⁷ The surgical bandage is the goods prepared from white bleached cotton gauge fabric of apposite quality.⁸

The surgical bandage found in roll form in the area of 3 to 4meters.⁹

With correct Machinery, you can sort Surgical Bandage and can stream remits in hospitals, clinics, medical stores, health shop etc.¹⁰

To making these products, a person should learn surgical bandage making procedure properly.¹¹ Then he should select a Location for Surgical Bandage production. Then he should arrange a Bandage Business Project Plan.¹² Then he should arrange finance and legal compliance. Then he should set up machineries.¹³ After that he should buy raw materials.¹⁴ Then he should promote his business plan. After that he should search for customers to sell his products. This is the production sequence of making bandage.¹⁵

To produce bandage products, one should learn bandage manufacturing process properly.¹¹ A new investor should select a location where skill manpower is present¹² and arrange simple machineries as describe later.¹³ Yarn as a main raw material can arrange from export oriented knitting and woven fabric manufacturing industries at a cheaper price¹⁴ and produce woven bandage fabric by following procedure as describe below.¹⁵

Bandage production process

Preparatory process

Warp preparation: Conventional Handmade Wooden Warping Machine.

Weft Preparation: Pirm Winding Machine

Warp preparation process

The cone packages of yarn are placed in front of the warping machine which is a wooden hollow charka .At first to form a band a specific no. of ends are getting passed from the reed gap.¹⁶ Then the band are formed like a knot which is hooked up on the wooden charka. The charka is driven by a motor or by hand .Charka has by and large 3m circumference.¹⁷ So, warping is done according to weaving requirement 150-200m warp yarn.5-6 bands are wrapped

around charka. Here total ends are almost 700-800.¹⁸ Then total warp is transferred to a wooden beam. Figures 2-4 shows warp preparatory process.

Weft preparation process

Pirn winding machine is used for weft preparation. It is fully motor driven.



Figure 2 Cone package for warping.



Figure 3 Reed for passing yarn to form band.



Figure 4 Band warping & beaming.

Weaving process

Weaving bandage fabric is totally done by conventional negative tappet loom .fabric construction naturally 24^s x24^s /18x12=36^o”, 30^sx30^s/18x16=36^o”, 30^sx30^s/36x28=36^o” 30+24x30+24/18x16=36^o”.¹⁹ Only a single motor is used for total mechanism and connected to household electric line of 220volt (Figure 5).²⁰

Here weft insertion system is under pick mechanism (Figure 6).

Beating mechanism is crank beat up (Figure 7).

Let off mechanism is negative (Figure 8) (Figure 9).



Figure 5 Conventional loom negative tappet shedding mechanism.



Figure 6 Picking system.



Figure 7 Beat up system.



Figure 8 Let off system.



Figure 9 Weel take up mechanism.

Wet processing

Accumulated gauge are placed on earth made huge bowl ‘Nanda’ in which the bottom portion is perforated which is placed on water vapour processing system on fire place temperatre almost 100°C (Figure 10) (Figure 11).²¹



Figure 10 Nanda homemade boiler.



Figure 11 Earth made bowl perforated.

Scouring and bleaching process flow

At first take 18yd x 100pcs bandages soaking in normal water (120ltr), then take 3.5kg bleaching powder mixing water soaked bandage in a house.²² Then take 3.5kg baking soda mixing in that house.²³ Then rinsing was done with foot wearing and rubber gumboot. Then it was kept for 6 hours.²⁴ After that hand washing was done in pond & drying under open sky (Figure 12).²⁵



Figure 12 Wet processing of bandages.

Sized bandages: According to buyer’s order sometimes bandages are needed to be sized .In this process bleached bandages are placed in drum where a mixture Barley powder with water at a ratio of 1:10. Then it is rinsed by hand & dried under open sky.²⁶

Sales & distribution process

Bandages are sold in various systems: - pieces, in weight, per yard etc. Manufacturers are selling at a rate of around 5.5bdt /yd. Wholesaler after purchasing from manufacturers make process in autoclave for sterilizing .Then packing unit makes packing as per consumers interest (Figure 13).²⁷



Figure 13 Storage area.

Conclusion

It has been seen from the papers that, the production process of bandages were briefly discussed. In hospitals or as a first aid item bandages are always an essential item. This product is sold in retail market at high price but the manufacturers are having less. If govt. comes forward to patronize them by providing loan or incentives this sector will become a promising sector to contribute to national GDP. Bandage is an important product for hospitals, clinics and medical stores. It should be produced properly to reduce further hassle like allergy or infection. This paper opens possible ways for the manufacture of bandage commercially.

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Conflicts of interest

The authors have no conflicts of interest regarding the publication of this paper.

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