



Daffodil
International
University

Faculty of Engineering

Department of Textile Engineering

Thesis Topic On

Effect of Fabric Structure on dimensional Stability of
Garments.

Course Code: TE-4214

Course Title: Project (Thesis)

Submitted By

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This Report Submitted in incomplete satisfaction of the necessities for the level
of **Bachelor of Science in Textile Engineering.**

Advance in Apparel Manufacturing Technology.

Duration: April, 2020

Declaration

We attest that this report is totally our own work, except where we have given fully documented references to the work of others and that the materials contained in this report have not previously been submitted for assessment in any formal course of study. If we do anything, which is going to breach the first declaration, the examiner/supervisor has the right to cancel my report at any point of time.

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Faculty of Engineering
Department of Textile Engineering

Approval Sheet

This experiment is “Effect of Fabric Structure on dimensional Stability of Garments.
.” at Daffodil International University, April, 2020. Made by to member, **Name:**
Md Iqbal Hasan (ID# 172-23-326), Name: Shakil Ahmed (ID# 172-23-329),
Name: Gowrob Ahmed (ID# 172-23-327), the Thesis for the level of BACHELOR
OF SCIENCE IN TEXTILE ENGINEERING has been analyzed and in this manner
recommended for support and affirmation.

Supervisor

Ms. Sharmin Akter
Lecturer
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Letter Of Approval

December 20, 2019

To

The Head

Department of Textile Engineering (DIU)

Datta Para, Ashulia ,Savar, Dhaka.

Subject: Approval of Thesis Report of B.Sc. in Textile Engineering Program.

Dear Sir,

I am just writing to let you know that this project report titled as “Effect of Fabric Structure on dimensional Stability of Garments.” has been prepared by the student bearing ID's **172-23-326, 172-23-329 and 172-23-327** are completed for final evaluation. The whole report is prepared based on the proper investigation and interruption through critical analysis of empirical data with required belongings. The student were directly involved in their project activities and the report become vital to spark of many valuable information for the readers.

Thusly it will profoundly be valued on the off chance that you mercifully acknowledge this task report and think about it for definite assessment.

Yours Sincerely

.....

Ms. Sharmin Akter

Lecturer

Department of Textile Engineering

Daffodil International University

Acknowledgement

By the infinite mercy of Allah we have been able to complete our project report **“Effect of Fabric Structure on dimensional Stability of Garments”** Successfully.

By then we should acknowledge the open way to offer us because of our good Mam Ms. Sharmin Akter, Lecturer, Department of Textile, Daffodil International University for giving us rules and proposition to complete this Project. His shrewd appeal help rational course and tries have made it possible to execute the undertaking dependably.

Our grateful thanks moreover go to Professor MD. Hosain Reza, Head of the Department of Textile Engineering, for his assistance and reliable bearing all through our long experience in Daffodil International University and the mechanical getting ready. I have appreciation towards the Chairman, overseeing executives, General Manager, Production supervisor, Administration chief who gave us scope for doing mechanical connection in the industrial facility just as for offering extension to work in their separate segment.

Finally however not the least, we are wanted to recognize my folks for their endorsement, support and love and every one of our companions for their assistance and backing to finish the report.

Dedication

From the beginning I have to give this cutting edge report to all-ground-breaking Allah for enabling me this opportunity to substantiate myself. Without god-like's help nothing would be possible. By then I have to dedicate my report to my people. I venerate them beyond a shadow of a doubt, for completing my assessment they accept an irreplaceable activity to wrap up. It's an uncommon enjoyment for me. Without their help it is extremely abnormal for me to complete this association so I'm grateful to them. My people were helpful to set up this association. Besides, I similarly need to submit this report to my reasonable supervisor, Ms. Sharmin Akter , Lecturer, Department of Textile, Daffodil International University, give us a very help and rule to arranged this association. I submit this report to my revered watchmen.

Abstract

The main objectives of this study to research about the **Effect of Fabric Structure on dimensional Stability of Garments**. I have completed my internship at fakir knitwear tld. Fakir industry is a well known garments industry. This industry is playing a vital role in our textile industry. Fakir knitwear ltd is a comprehensive manufacturing and exporting company. It has knitting, dyeing, finishing, cutting, and sewing section. I have visited all this section and learn about them. Fakir knitwear ltd works with European and USA buyer. H&M, Primark, Tema, Peacock, Penneys, Zara are their regular buyer. This company provide best quality product to their customer. They don't compromise with quality. They have very skilled worker and strong maintenance system. During my training periods I have never face any short of problem, they treat me as a guest. They always show their respect towards me. Whenever I asked to anyone any question they answer me with respect and patience. I'm grateful to complete my training in this Industry. This report will discuss about the effect of the fabric structure on the dimensional stability of the garments. This report will also discuss about how the dimensional stability of fabrics can affect the organization. Dimensional stability of fabrics refers to the change of the size of the fabrics when the fabrics used in reprocessing. There are different factors in dimensional stability of fabrics such as the characteristics of the fabrics, the yarn parameter, apparatus parameter etc.

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Chapter:-1

1.1 Introduction

Garments industries are considered as the most important sector for Bangladesh. This also the biggest sector of Bangladesh from where the most revenue comes. This sector also considered as the principle source of foreign exchange earning of the country. The readymade garments (RMG) of Bangladesh are very much popular to many other countries of the world. In the area of textile the dimensional stability of fabric is considered as the most important thing. To provide the best quality cloths fabrics is the mostly considerable thing. The fabrics are the most inevitable part of cloths without which the cloths cannot be made of. This report will discuss about the effect of the fabric structure on the dimensional stability of the garments. This report will also discuss about how the dimensional stability of fabrics can affect the organization. Dimensional stability of fabrics refers to the change of the size of the fabrics when the fabrics used in reprocessing. There are different factors in dimensional stability of fabrics such as the characteristics of the fabrics, the yarn parameter, apparatus parameter etc. A detailed discussion on the dimensional stability of the fabrics and factors that affects the fabric shrinkage will be discussed in the topic also. **Fakir Knitwears Ltd** is a comprehensive manufacturing and exporting company of Bangladesh. It comprises the ultra modern plants related to garment industry, such as independent knitting, dyeing, sewing, finishing and packaging with sufficiently supportive backward linkage facilities, will be considered to complete this report. Hope that the author will get a clear knowledge about the mentioned sector.

1.2 Origin of the Report

For supporting my internship report I worked as an intern in **Fakir Knitwears Ltd** and my topic of the report is the effect of fabric structure and its dimensional stability. This is a very well known garment industry of Bangladesh. Almost 12000 people work in this organization. One of most significant challenges for **Fakir Knitwears Ltd** is to strongly manage its fabric quality.

As a partial requirement of Textile program I need to go for internship report to gather practical experience and need to submit the report regarding that practical knowledge. This report is originated to require completing the Textile program from Daffodil International University. This report will definitely increase the knowledge of other students to know the factors that affect the fabrics dimensional stability as well as the methods of solving any arising problem.

In Daffodil International University, Faculty of Science & Information Technology, Department of Textile Engineering, all students have to complete a three months internship in a particular organization as a part of completing graduation. At the end of the internship a report submission is mandatory, under the supervision of academic supervisor. I got an opportunity to do my internship in The **Fakir Knitwears Ltd**. During my internship period, the Managing Director of **Fakir Knitwears Ltd** Mr. F.A. Zaman helped me so much to complete my report. He provides me the information I need to complete the report. Based on his information, I have prepared this report. I provide some recommendation with my limited knowledge, which I believe will be helpful in future days.

1.3 Statement of the Problem

This study may raise some statement or remedy of the problem of **Fakir Knitwears Ltd.** As a private organization frequent political pressure & macroeconomic situation of the country hamper the organization smooth operation. The Organization also takes some reasonable steps in their improving quality of their fabrics. They are required to send information of various organizations or qualities, warranty, so on requested by BSTI. They are trying to maintain their best level. All the processes and verification are done very cautiously so that no adverse situation occurs which may hinder the quality of the fabrics. They always pay more attention to the fabrics which is used to making the cloths. They are also very much aware about their customers.

Moreover, whenever they conduct their activities few new measures are taken or some new strategies are followed so that they can conduct the activities without any risk.

They have used separate idea for every specific sector. But some are difficult to accomplish separately. I was practically worked there. I closely observed their activities also noticed that they are so much aware about the fabric quality. They believe that a good fabric can make a good cloth and that's why they pay their much attention to the dimensional stability of the fabric. Mr. F.A. Zaman, the managing director of **Fakir Knitwears Ltd** told me customers always want to get the best quality of fabric and they also want to provide the best quality of cloths to their customers and that's why they are very much eager to ensure the best quality of fabrics.

Chapter- 2

Literature Review

Host of factors affect the dimensional stability of fabrics such as moisture absorption, tightness of yarn, processing tension but in Bangladesh is increasingly getting more and more conscious of fabrics (Anand et al., 2018). Temperature also has a great effect on fabric shrinkage, because the high temperature has the effect of relaxation and expansion, and even heat shrinkage. The customers do not compromise for the quality of cloth items and even prepared to pay more prices for the quality product. The quality of fabrics has a very significant effect on the customer (Topalbekiroğlu and Kaynak, 2017). Customers in India not only aware of quality cloths rather they purchase variety of quality cloths and concluded that rural consumers are also willing to buy a cloth of good fabrics if their prices are lowered in future.



Fig: 1

Moisture absorption and processing tension plays a very important role in the dimensional stability of fabrics(Sarkarand Khalil, 2018). Under normal circumstance, fabrics with minimum shrinkage rate are synthetic fibers and blended fabrics; secondary is linen fabrics; middle is cotton fabrics; the maximum is viscose fabrics. In addition to this, the shrinkage rate varies from fabrics density, the thickness of yarns, weaving, dyeing and finishing process(Malik et al., 2019).Quality is the major factor to prefer a particular fabric in clothing. If preferred fabrics were not available, customers buy the available fabrics.



FIG: 2

Viscose fabrics are a lightweight material with a nice drape, a lustrous finish, and a soft feel (Van Amber et al., 2017). It is relatively inexpensive and can convey luxury for a much lower price point. It also blends well with other fibers like cotton, polyester, and spandex

2.2 Limitations of the Report

To prepare a report on the topic like this in a short duration is not easy task. From the beginning to end, the study has been conducted with the intention of making it as a complete and truthful one. In preparing this report some problems and limitations have encountered which are as follows: As the data, in most cases, are not in organized way, the company failed to provide all information.

The study was conducted in the dimensional stability of fabrics structure. Some of the respondents were hesitating in giving the response, so there may be chances of biasness.

Working as an intern in the organization I tried my best to gather the data's and information for preparing my report properly. As I am not the part of the organization sometime the authority denies to give their confidential information to me.

To prepare this report I had to face some limitations. They are given below:

- Lack of opportunity to access to internal data.
- Much confidential information was not disclosed by respective personnel of the department.
- Due to time limitation, many of the aspects could not be discussed in the present report.
- Since the company personnel were very busy, they could not pay enough time.
- I had to base on secondary data for preparing this report.
- Legal action related information was not available.

2.3 Objectives of the Study

Working on the dimensional stability of fabrics will help me understand the overall measures taken by **Fakir Knitwears Ltd** to ensure the quality of fabrics. Dimensional stability of fabrics is now an emerging topic. Garments industries are getting to much competitive sounderstanding the stability of fabrics is helpful for expanding business operation for the firm and helpful to me for gathering knowledge about importance of fabrics.

Specific Objectives:

Study was conducted with following objectives:

- To identify factors affecting fabrics shrinkage; its means when a fabric get shrinkage what issue they consider much that time. Different types of fabrics and different types of treatment for them are affecting or considering the influence factor. From this study we are able to know which factor force a fabric to shrink and which factors can be taken to make them right again.
- To study the importance of identified factors affecting fabrics stability. It indicates the specific reasons are affected by which factors as well as the dimension of fabrics are affecting which.

2.4 Methodology of the Study

The study is performed based on the information extracted from different sources collected by using a specific methodology. To fulfill the objectives of this report total methodology has divided into two major parts:

Data Collection Procedure: In order to make the report more meaningful and presentable, two sources of data and information have been used widely:

Primary Sources

Primary sources refer to the process of collecting data by an individual directly from the source(Lindberg et al., 2018). This is also called the firsthand evidence. Primary sources include historical and legal documents, eyewitness accounts, and results of experiments, statistical data, pieces of creative writing, audio and video recordings, speeches, and art objects.

The “Primary Sources” are as follows:-

- Interviewing with the officials of **Fakir Knitwears Ltd.**
- Official records and observing practical work.
- Face to face conversation with the customers by random selection of among people.
- Direct observation.
- Practical work experience at the different departments of **Fakir Knitwears Ltd.**
- Discussions and meetings with the consumer of **Fakir Knitwears Ltd.** regarding their feelings, opinions and feedback regarding **Fakir Knitwears Ltd.**
- Interaction with some customers via telephone through which I could capture their perception about the company.
- Field visits to the factory of **Fakir Knitwears Ltd**meeting with the engineers.

- Questionnaires
- Data collection from employees.
- Input the data in SPSS software.
- Founding the result on ANOVA, Frequency of data, Mean of the data.
- I have discussed with officials about the marketing activities of **Fakir Knitwears Ltd.**
- Sharing practical knowledge of officials.
- In-depth study of selected cases

2.5 Basic Concept about Fabrics

A textile fabric is a cloth that has been woven, knitted, tufted, knotted, or bonded together using natural or synthetic threads, yarns, and other materials(Senthilkumar and Anbumani, 2019). Popular fabrics include cotton and leather, but even seaweed and gold have been used to make textiles.

To provide the best quality cloths fabrics is the mostly considerable thing. The fabrics are the most inevitable part of cloths without which the cloths cannot be made of. A textile is a stretchy material consisting of a system of normal or artificial fibers(Wemyss and De Boos, 2018). Yarn is formed by spinning raw fibers of wool, flax, cotton, hemp, or other materials to produce long strands. Textiles are produced by weaving, knitting, crocheting, knotting, tatting, felting, or braiding.



FIG: 3

Knitting:

The process in which fabric is produced by a set of connected loops from a series of yarn in warp and weft direction is called knitting.

Types of Knitting:

Two types of knitting are used,

- warp knitting
- weft knitting

Warp knitting:

In a warp knitted structure, each loop in the horizontal direction is made from a different thread and the number of threads used to produce such a fabric is least equal to the number of loops in vertical direction.

Weft Knitting:

In a weft knitted structure, a horizontal row of loops can be made by using one thread and the thread runs in horizontal direction.

2.6 Types of Fabrics

There are many types of fabrics in the world. They are given below:

- Cotton Fabric
- Silk Fabric
- Linen Fabric
- Wool Fabric
- Leather fabric
- Ramie Fabric
- Hemp Fabric
- Jute Fabric

Cotton Fabric

Cotton is considered as the natural fiber which is originated from the seedpods of the cotton lodge(Hsu and Cheek, 2019). There are many types of fabric which are made from cotton.

Generally cotton is notch in the centre and look a lot like a warped ribbon under the microscope.

There are three types of cotton fabric. They are:

- Gossypium Barbadense
- Gossypium Arboretum
- Gossypium Herabacum



FIG : 4

Silk Fabric

Silk is another natural fabric which is made from the cocoons of mulberry silkworm through a method named sericulture (Bergen and Clutz, 2017). It is known as different names in different countries such as it is called “Paat” in East India, in South India it is called “Pattu” and in North India it is called “Resham”. The yarns created from the method of sericulture are worn to knit a multiplicity of textiles.

The characteristics of silk are given below:

- The most well-appointed fabric.
- The most contented fabric.
- The well-built natural fiber.
- Silk has the most tensile strength.
- Consists of the moderate scuff resistance.
- Has excellent durability.

Fig : 5

Linen Fabric

This fabric is known as the oldest fabric of the world. The history of linen fabric goes back thousands years ago(Senthilkumar and Anbumani, 2018). The historians say that linen fiber was found in a historic cave 30,000 years ago. It was found in Egypt. The industry of linen was very much significant and played a vital role in the economy of many countries in the Europe and also in the America.

The characteristics of linen fabrics are given below:

- Linen fabric is very much absorbent and strong.
- It dries faster than cotton.
- It has a tendency to wrinkle.
- It is very much comfortable and perfect for hot weather.



Fig: 6

Wool Fabric

Generally this is the natural fabric which comes from sheep and likely animals (Bergen and Clutz, 2017). This also included the cashmere and mohair from the goats, quit from muskoxen, hide and fur clothing from bison, angora from rabbits, and other types of wool from camellias.

Properties of wool fabric are given below:

- The fabric is created of amino acid.
- Good absorbency.
- High moisture reign.
- The fabric is much warmer than other.
- Excellent resiliency and elasticity.

The characteristics of wool fabrics are conducted below:

- The only animal fabric which included sulfur in composition.

- Perfect fabric for winter.
- Excellent drapability.

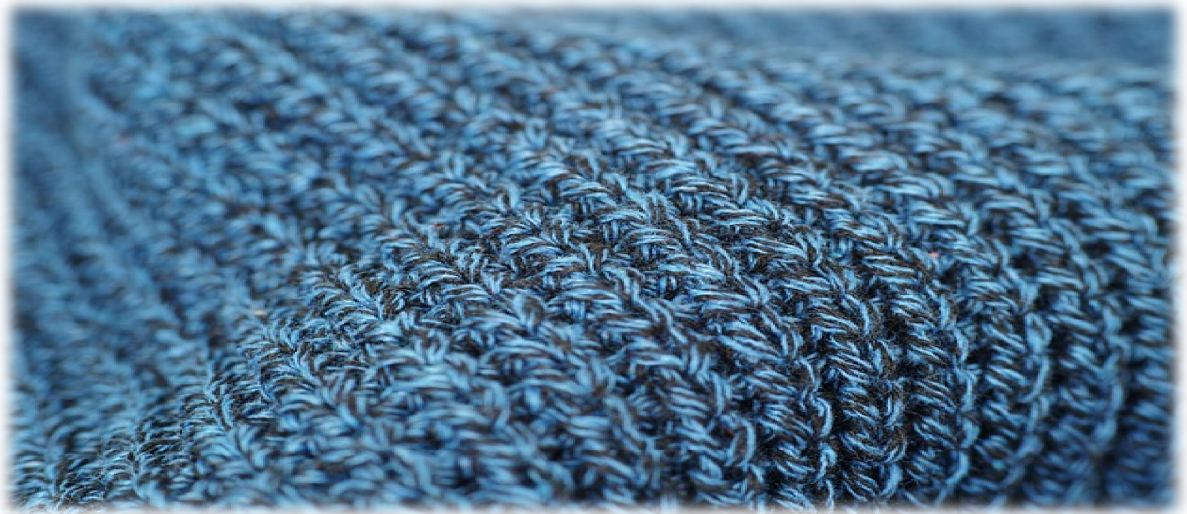


Fig: 7

Leather fabric

Leather is considered as the fabric which is made of with the skins or hides. It is a fabric that can resistant the wrinkle(Senthilkumar and Anbumani, 2018). It is also a durable fabric. The historians say that it is another historical fabric after the linen fabric. They said that leather fabric was founded in more than 7,000 years ago. This fabric is also considered as the high demanding fabric all over the world.

There are several types of leather. They are given below:

- Top grain leather.
- Embossed grain.
- Split suede.
- Nubuck sueded grain.
- Fibre or bonded leather.



Fig : 8

2.7 Dimensional Stability of Fabric

In our daily life when we buy any new cloth we washed it with water. Nowadays it is a matter of concern that when we wash our cloths once or twice with water the original size of the fabric changed. This thing has a great effect on the user experience. Now a common question arises that how this did happens? Or what is the reason behind this behavior of fabrics? This is called the dimensional stability of fabrics.

Dimensional stability of fabrics refers to the change of the size of the fabrics when the fabrics used in reprocessing(Bergen and Clutz, 2017). The fabric which has good dimensional stability is washed many times and the original size or shape of the fabric remains same. They are remaining unchanged. But the fabric which has bad dimensional stability has the shrinkage problem after washing the cloth. There are also many shrinkage problems such as ironing shrinkage, sewing shrinkage etc. Among all of them the customers pay more attention to the shrinkage. The shrinkage of fabrics has a very bad effect in user experience.

Factors That Affecting the Shrinkage of Fabrics:

There are many factors that affect fabrics shrinkage. They are:

- The Moisture Absorption of Fiber.
- The Processing Tension of Fabric.
- Different Raw Materials.

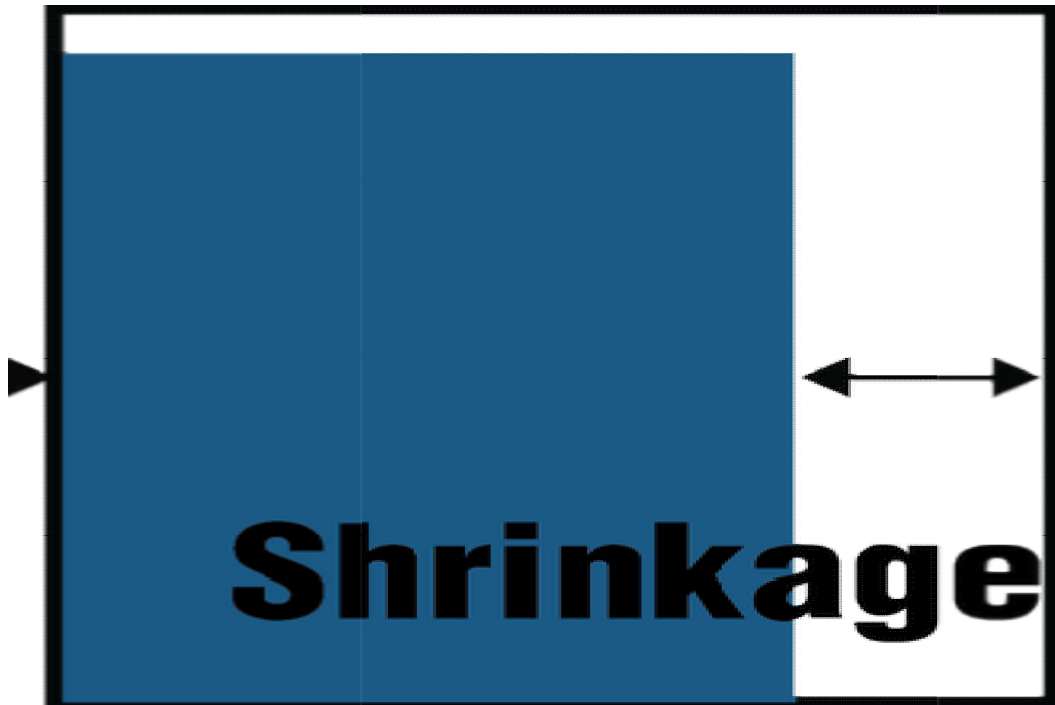


Fig : 9

The Moisture Absorption of Fiber

The direct factor that affects the fabric shrinkage is the humidity absorption of the fiber (Emirhanova and Kavusturan, 2019). There are also some factors that affect the fabric shrinkage such as the structure of the fabric and the tightness of yarn but their effect is indirect. The yarn swells when there is an expansion in the fiber. Then the warp height of the yarn in the fabric increases and the length of the yarn in the buckling state becomes shorter, so the fabric shrinks.

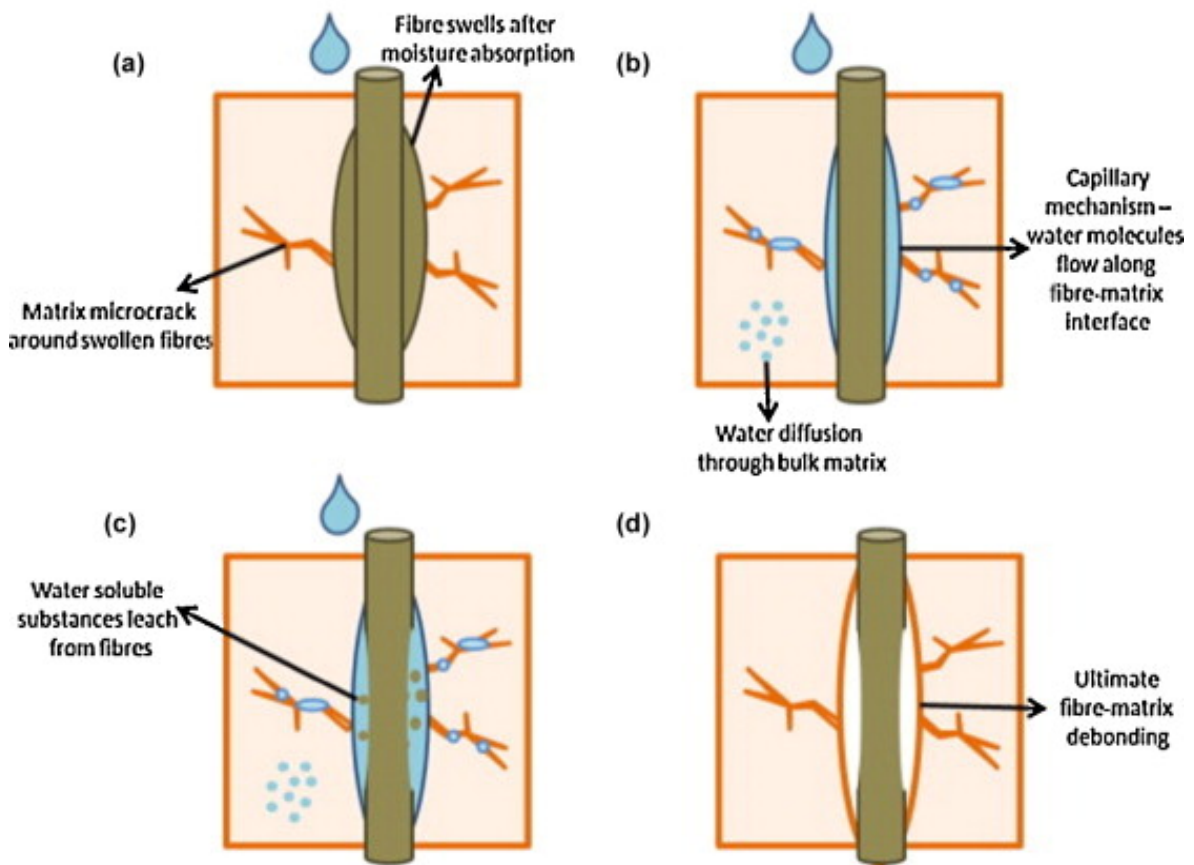


Fig: 10

The Processing Tension of Fabric

This is considered as the most important factor that affects the shrinkage of the fabric. The increase of processing tension also increases the deformation of the fiber (Bergen and Clutz, 2017). It also causes the internal stress and the slow elastic deformation. Then the relaxation and retraction degree of the fabric increases after soaking, which makes the shrinkage rate of the fabric increase obviously. Temperature also affects the shrinkage of fabrics. High temperature has the effect of relaxation and expansion.

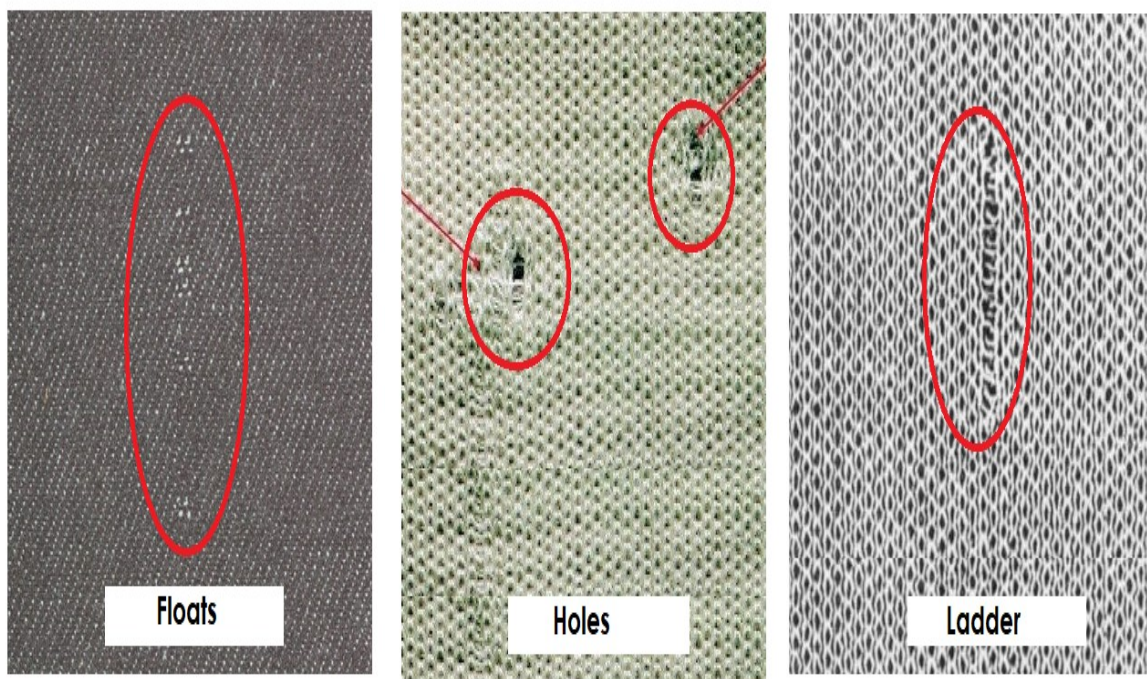


Fig: 11

2.8 Different Raw Materials

Using different raw materials affects the fiber to shrinkage. Mixing up different raw materials make the fiber weak and also causes fiber shrinkage. Under normal circumstance, fabrics

with minimum shrinkage rate are synthetic fibers and blended fabrics; secondary is linen fabrics; middle is cotton fabrics; the maximum is viscose fabrics(Emirhanova and Kavusturan, 2019). In addition to this, the shrinkage rate varies from fabrics density, the thickness of yarns, weaving, dyeing and finishing process. Different kinds of fabrics have been prescribed standard of shrinkage rate. In the process of dyeing and finishing, some processes like mercerization and preshrunk can reduce shrinkage rate(Bergen and Clutz, 2017). Synthetic fiber is easy to deform when heated, especially nylon fabrics, it shrinks more easily when heated, but it can improve its dimensional stability by hot setting.

2.9 HISTORY OF INDUSTRY

Beginning History of Fakir KnitwearsLtd.

FAKIR started its journey in 1988 – as Knit garment manufacturers – under the leadership of its experienced entrepreneurs, aiming to become the trendsetter it is today. FAKIR was aware of the fact that short lead-time played a vital role in the modern apparel-industry. So, it located itself in Narayanganj & attire-manufacturing hub of Bangladesh. It became one of the leading Bangladeshi knit garment-manufacturers to acquire state-of-the-art machinery, dyes and chemicals to ensure best product-quality and safety. FAKIR has been awarded the Oeko-Tex 100 Standard Certificate. The factory is compliant for the BSCI Social Compliance Standard and Sedex. So, it has emerged as a compliant and customer-focused organization. It has contributed in social development and is reputed as an eco-friendly organization. Today, after over a decade of progression, FAKIR Garments Limited is the pioneer of the garment-industry of Bangladesh and the prime choice of many foreign retailers. It has grown from fabric-manufacturer to composite-knitwear manufacturer, with a massive capacity of over a million pieces of garment per month. The sky holds the limits for FAKIR.

The organization flourished from a tiny personal initiative to its present day grand status and reputation due to the honesty, sincerity, integrity and devotion of the founder. Now it stands as one of the famous garment industry of the country employing a large work force and drawing much of good will from the common masses while contributing a lot to the economic development of the land.

Since the emergence of Bangladesh Fakir Group have had a vital role in the development of knit garments sector. The group has been working with an outstanding result oriented performance which simply coming out of inherited & inherent initiatives. Fakir Group throughout its striving in industrialization has emphasized in identifying & innovating the industrial & business linkage needs and has been initiating all possible measures to satiate required establishments. At this stage fakir group focused to be one of the best & largest conglomerate especially in garment sector in the country, employed around 12000 people to its member companies. Fakir Group is best described by 3 (three) words - Sincerity, Honesty & Quality.

Over the years, FAKIR has manufactured a wide variety of basic products, such as: Polo-Shirt (Basic/Fancy), T-Shirt (Basic / Fancy), Sweat-shirt & Sweat-Pant, ladies & kids-wear, etc. Currently, FAKIR has evolved to the level of manufacturing specialized knitwear-products, by keeping the track of the latest market-trends.

FAKIR has crossed the border of using only ordinary Yarns, such as: Cotton, Polyester, CVC, PC, et c. and it can now make use of Organic, Rayon, Modal, Pima and Fair-trade yarns. FAKIR manufactures technical fabric, such as: Viscose, Coolmax and Suplex, using cutting-edge technology. FAKIR's vast infrastructure allows us manufacturing almost every knitwear product for men, women and kids. It specializes in value-added products, such as: Peach-Finished, Pigment-Piece-Dyed, and Heavy Enzyme-Washed and Eco-Friendly

products. It is currently concentrating on Knit-Denim products, which is soon expected to have a massive impact on the fashion-market.

For bringing economic growth catering the need of the buyer & valued clients at home & abroad and thus to contribute the nation.

2.9.1 Corporate Information

Name of the Company	Fakir Knitwears Ltd
CEO & Managing Director	Mr. F.A. Zaman
Motto	Knit Your Dreams
Legal Status	Private Limited Company
Registered Office	kayumpur, Hajeegonj, Fatullah, Narayongonj

2.9.2 General Information

- Total number of building: 15
- Total land area: 31Kr
- Production capacity: 35-40 mt/ day
- Transport facility: They have available transport for their employee.
- Total no. of department: 11
 - Human resource.
 - Compliance
 - Account
 - Dyeing
 - Knitting
 - Inventory
 - Audit
 - RMG
 - Maintenance
 - Printing
 - R&D (resource and development)

Certified By

- ISO 9001:2008
- OEKO-TEX (Fabric)
- GOTS
- Member of SEDEX (The Suppliers Ethical Data Exchange)
- OEKO-TEX (Garment)
- BSCI (Business Social Compliance Initiative)
- SCR (Social Compliance Requirements)

2.9.3 Board of directors

Chairman	Mrs. Sultana Zaman
Managing Director	Fakir Akhtaruzzaman (C.I.P)
Deputy Managing Director	Fakir Mashrikuzzaman (Neaz)
Director	Farzana Zama

Bankers

- DBBL
- One Bank
- United Commercial Bank

Name of the buyer

Brand Name	Country Name
H&M	Sweden
Primark	United Kingdom
Tema	Turkey
Penneys	U.S.A

Zara	Spain
Mexx	Netherlands

2.9.4 Section

- Knitting Section
- Dyeing Section
- Finishing Section
- Quality Control Section
- Physical Lab
- Chemical Lab
- Research and Development (R&D)
- Merchandizing & Marketing
- Garments Section
- Maintenance Section
- Workshop Section
- Utility
- Human Research (HR)
- IE and Planning Section.

Management of Fakir Knitwears Ltd.

Fakir Knitwears Ltd is a large company in garments sector of the country. It has 11 depots

throughout the country. The Head Office of the bank is located at kayumpur, Hajeejonj,

As it a family based company, the governing bodies are held by the family members of **Fakir**

Knitwears Ltd.

2.9.5 Mission, Vision and Other Strategies of the Fakir Knitwears

Ltd. Company

The world is changing all around us(Emirhanova and Kavusturan, 2019). To continue to thrive as a business over the next years and beyond, they look ahead, understand the trends and forces that will shape their business in the future and move swiftly to prepare for what's to come. They have got ready for tomorrow today. It creates a long-term destination for their business and provides us with a "Roadmap" for winning together with their bottling partners.

Mission

Their Roadmap starts with their mission, which is enduring. It declares their purpose as a company and serves as the standard against which we weigh our actions and decisions.

- To refresh Bangladesh with quality products.
- To inspire moments of tradition and happiness.
- To create value and make a difference.

Vision

Their vision serves as the framework for their Roadmap and guides every aspect of their business by describing what they need to accomplish in order to continue achieving sustainable, quality growth.

- **People:**Be a great place to work where people are inspired to be the best they can be.
- **Portfolio:** Bring to Bangladesh a portfolio of quality consumer brands that anticipateand satisfy people's desires and needs.
- **Partners:**Nurture a winning network of customers and suppliers, together we createmutual, enduring value.
- **Profit:**Maximize long-term return to shareowners while being mindful of theiroverall responsibilities.
- **Productivity:**Be a highly effective, lean and fast-moving organization.

Live Their Values:

Their values serve as a compass for our actions and describe how they behave in Bangladesh.

- **Leadership:** The courage to shape a better future
- **Collaboration:** Leverage collective genius
- **Integrity:** Be real
- **Accountability:** If it is to be, it's up to me
- **Passion:** Committed in heart and mind
- **Diversity:** As inclusive as our brands

Focus on the Market:

- Focus on needs of consumers, customers and partners
- Get out into the market and listen, observe and learn
- Possess a world view
- Focus on execution in the marketplace every day
- Be insatiably curious.

Work Smart

- Act with urgency
- Remain responsive to change
- Have the courage to change course when needed
- Remain constructively discontent
- Work efficiently

Act like Owners

- Be accountable for our actions and inactions
- Steward system assets and focus on building value
- Reward people for taking risks and finding better ways to solve problems
- Learn from outcomes – what worked and what didn't

Be the Brand

- Inspire creativity, passion, tradition, and purity.

SWOT Analysis of Fakir Knitwears Ltd.



Strength

- It has capacity of operating business in Bangladesh broadly.
- Its products' quality is exportable standard.
- Its management personnel are experienced.

Weakness

- Narrow intension for expanding business.
- Production capacity is lower than market demand.
- It has lower level of reputation in market.

Opportunity

- It can expand business operation in abroad.
- Consumer loyalty can be gained through quality products.
- It can grow new market demand and new market.

Threat

- Large competitions among the companies exist at consumer goods sector.
- **Fakir Knitwears Ltd.** is much dependable on supplier as they have no farming plant

2.9.6 PEST Analysis

It indicates the macro environment of a company. How flexible of macro environment of **Fakir Knitwears Ltd.** the performance of a company dependent on it.

Politics

As governments intervene in the economy, businesses are bound to be affected. Indeed, employment policies, tax laws, trade restrictions can impact the business directly and indirectly, along with political stability and how foreign markets operate(Postle, 2017). From the company information it has slight impact on the political.

Economic

This is easy to understand. Macro and micro-economical economic factors such as interest rates, exchanges rates, inflation, and disposable incomes influence how the organization will manage the business at present and in the long run(Gore et al., 2017). **Fakir Knitwears Ltd** is a private company so its complexity is not more.

Social

This has to do with the beliefs and culture of the society the business is operating in. Population trends, dietary considerations, ethics and media, and spend habits are some of the factors that come under social considerations that you need to observe in your business activity(Choudhary and Goel, 2018). Every organization has to work for the society.

Technological

Finally, businesses also have to deal with production, distribution, and communication changes imposed by new technology in order to stay afloat in a competitive economic landscape(Değirmenci and Celik, 2019). It is medium technology enable Company.

Chapter -3

Materials & Method:

3.1 Fabric:

Fabric A 100% cotton single jersey knitted fabric was used in this study. The fabric of 160 g/m² areal density was knitted on 24 gauge knitting machine with 36 inch diameter using 40 Ne combed yarn, 2.2 cm stitch/loop length.

3.2 Chemical:

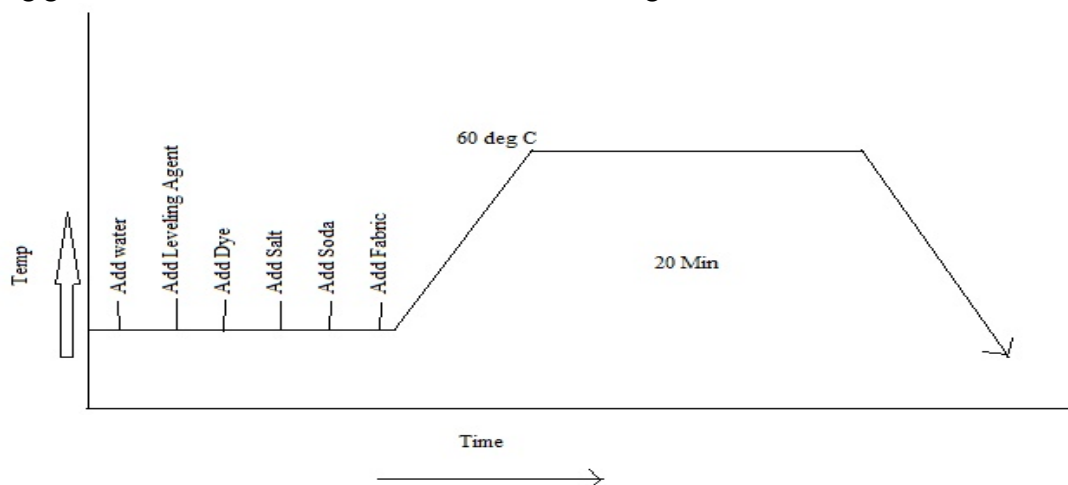
Chemicals and Auxiliaries Fixapret: A modified crosslinker based on dimethylol dihydroxyethylene urea methanol and diethylene glycol, supplied by unlike self-crosslinking agents, it is a reactant crosslinker; it contains extremely low level of uncombined free-formaldehyde. Arkofix : A modified dihydroxyethylene urea by Clariant; it is a formaldehyde-free crosslinking agent, comprising only the dihydroxyethylene groups and no methylol groups.

3.3 Fabric Pre-treatment:

The pre-treatment of the fabric was done in industrial wings dyeing machine at 110°C for 15 minutes using 1.5 /l hydrogen peroxide, 1.8g/l caustic soda, 0.6 g/l wetting agent and 0.5 g/l anti-creasing agent .The bleached fabric was then thoroughly washed, rinsed and neutralized by using 1.3g/l acetic acid.

3.4 Fabric Dyeing:

Fabric done by using 2% Of reactive dye for the weight of fabric. Using leveling agent 15ml. Using glubar salt & soda ash as 40ml & 15ml. then using initial water at 70 ml.



Resin Finishing:

In the first set of 15 experiments, the three selected agents/resins were applied on the knitted cotton samples at five different concentrations, 125 g/l. The recipes were prepared with the specified amount of the resins and MgCl₂ catalyst (20% of the amount of resin used). The application of the recipes was done on the laboratory at 75% pick-up, followed by drying at 130°C for 2 minutes and curing at 150°C for 2 minutes.

3.5 Testing Method :

Testing of the Treated Fabric All the treated fabric samples were subjected to conditioning according to ASTM & ISO prior to testing. The length and width-way shrinkage of the samples was determined after washing the samples according to AATCC. The bursting strength of the samples was tested.

Chapter : 4 RESULTS AND DISCUSSION

Effect of Different Resins on Dimensional Stability of Knitted Fabrics A summary of the treatment results with different resins/ agents is given in Table I. Figure 1 illustrates the effect of different agents on shrinkage of the knitted fabrics treated with different concentrations. Without any treatment, the fabric's lengthways and width ways shrinkage values were 16.5% and 7% respectively.

TABLE I. Effect of Different Resins on Shrinkage and Bursting Strength of Knitted Fabric.

No.	Resin Type	Concentration (g/l)	Fabric Shrinkage (%)		Fabric Bursting Strength (N)
			Lengthways	Widthways	
1	NIL	0	16.52	7.10	76.25
2	Modified Dimethylol Dihydroxy Ethylene Urea (DMDHEU)	25	8.88	6.47	53.00
3		50	5.71	3.96	37.00
4		75	4.90	2.32	33.00
5		100	3.84	1.91	30.75
6		125	3.45	1.32	27.75
7	Methylolated Glyoxyl Monourien	25	9.87	6.80	55.00
8		50	6.71	5.10	52.00
9		75	5.26	3.16	49.00
10		100	4.34	2.04	45.00
11		125	3.90	1.36	40.50
12	Modified Dihydroxy Ethylene Urea (DHEU)	25	11.09	6.90	61.75
13		50	8.56	6.10	57.75
14		75	7.29	4.31	55.25
15		100	6.88	3.88	53.00
16		125	6.35	3.06	51.00

Table: 1

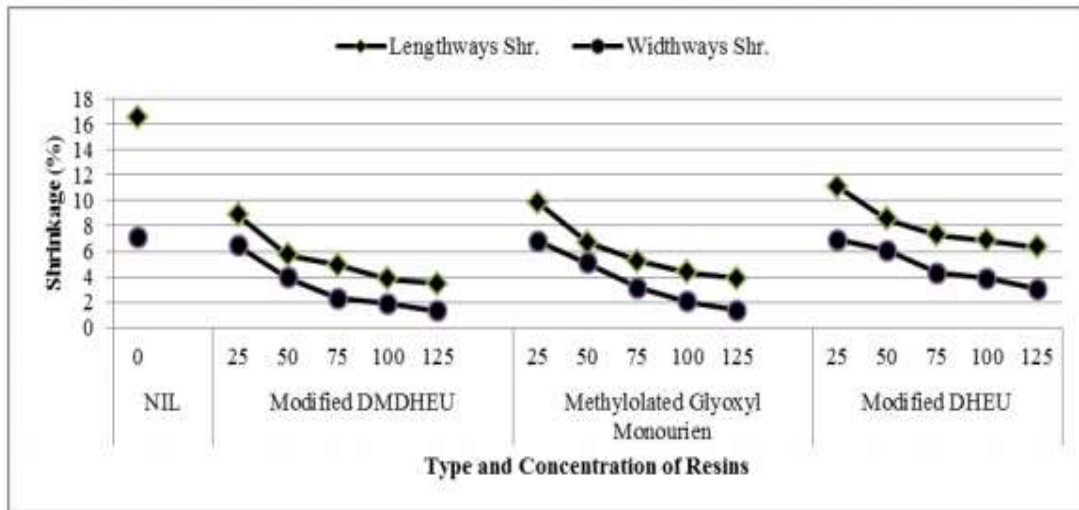


FIGURE 1. Effect of different resins on fabric shrinkage.

table: 2

4.2 Treatment for Fabric Shrinkage

There are some treatments for the shrinkage fabric through which the fabric can be stretched back to its normal size. The thermoplasticity is considered as the method of treatment for shrinkage fabric with use of which the fiber can be stretched into its normal position (Emirhanova and Kavusturan, 2019). This will help the fabric to back to its normal size.

There are few things which should get more attention while washing clothes. Different fabrics has different characteristics so different clothes needs different actions to take such as while washing wool clothes one should pay more attention to some facts while washing wool clothes some amount of water should add and or some quality dry cleaning aids should add (Postle, 2017). This will help the fabric to shrink and the original size of the fabric will be same. The temperature should not be too high when drying clothes.

Fabric Inspection

This method is generally follows while the cloth is in under processing. After knitting fabric is sending to for the inspection, where operator is inspect the fabric and identify fabric fault.

Inspection is done in 4 point system.

4-point system

No. of fault	Point
0-3''	1
>3''-6''	2
>6''-9''	3
>9''	4
Hole <1''	2
Hole >1''	4

Table : 2

Acceptance calculation:

Up to 20 point = A

21-28 point = B

Above = Reject

Chapter - 5

Conclusion and References

5.1 Conclusion

There is large difference between the theoretical knowledge and practical experiences. This is truer in case of study of Textile Technology. Theoretical knowledge gives us the concept about the topic we work for but the practical knowledge helps us to understand directly about the topic. So practical knowledge is better than theoretical knowledge. To make this report I had to go to the **Fakir Knitweares Ltd** for collecting the necessary information about my topic. After 3 months working with them my knowledge about textile sector has increased a lot. This report has successfully discussed about the entire mentioned sector. In this report has discussed about the dimensional stability of the fabric structure. Detailed information about the **Fakir Knitweares Ltd** has been conducted in the report. How the fabrics can be shrunk and what factor affects the most in the shrinkage of the fabric also discussed in the report. Finally it can be said that the main purpose of the report has become successful.

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