FACULTY OF ENGINEERING

DEPARTMENT OF TEXTILE ENGINEERING

Study on De-Watering Machine

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Letter of Approval

April 1, 2019

To
The Head
Department of Textile Engineering
Daffodil International University
102, Sukrabad, Mirpur Road, Dhaka 1207

Subject: Approval of final year project report.

Dear Sir,

I am writing to let you know that this project report titled as **"Study on De-watering machine"** has been completed for final evaluation. The whole report is prepared based on proper investigation and understanding though critical analysis of empirical data with required belongings. The students were directly involved in their project activities and the report becomes vital to spark off many valuable information for the readers.

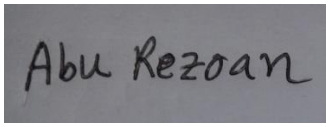
Therefore, it will highly be appreciated if you kindly accept this project report and consider it for final evaluation.

Yours Sincerely,

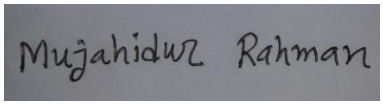
Tanvir Ahmed Chowdhury
Department of Textile Engineering
Faculty of Engineering
Daffodil International University

DECLARATION

We hereby declare that the work which is being presented in this thesis entitled, **"Study on De-watering machine"** is original work of our own, has not been presented for a degree of any other university and all the resource of materials uses for this project have been duly acknowledged.

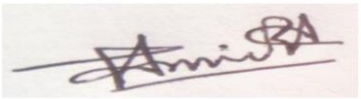


Md. Abu Rezoan Date:



Md. Mujahidur Rahman Date:

This is to certify that the above declaration made by the candidate is correct to the best of my knowledge.



Tanvir Ahmed Chowdhury Date :

Supervisor

ACKNOWLEDGEMENT

Above all, we praise the almighty Allah who gave us His enabling grace to successfully complete this research work.

With sincerity, we extend our warm and deep appreciation and gratitude to our supervisor, **Tanvir Ahmed Chowdhury,**Faculty of Engineering of Daffodil International University for his unreserved guidance and support to come up with this research work. Being working with him, we have not only earned valuable knowledge but were also inspired by his innovativeness which helped to enrich our experience to a greater extent. His ideas and way of working was truly remarkable. We believe that this research could not be finished if he did not help us continuously.

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We would also like to thank our friends, our family members, authority Confidence Ltd.for their kind support and encouragement for this research work.

Dedicated

To

“Our Parents & Teachers”

Abstract

The aim of this project is to evaluate the impact De-watering machine on GSM, Stitch length and diameter of the fabrics. We observe squeezing of the fabric and make materials for the next process. We learn about textile de-watering process. We observe change in GSM, Stitch length and Diameter of the fabric. We observed if the Fabric dia is longer than machine dia when passed fabric into the machine dia that time fabric dia and machine dia will be equal or fabric dia will be small. It is to be hoped that by the end of this paper the reader will have a better idea about the time, what are the importance of time in a De-watering machine and which time is better and widely used in the squeezing operation. By doing this project our idea about the time on de-watering .This performance must applicable in our practical life.

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Chapter 01

Introduction

1.1 Introduction

After dyeing process, the fabrics is ready for squeezing. It is the process to remove the water from the fabrics partially by squeezing. Squeezing machine place an important role in knit finishing section of the knit fabrics. Squeezing machine is used for reducing water from the wet fabric. It reduces the water content of the fabric.

In sew texture completing procedure; de-watering machine is utilized if there should be an occurrence of cylinder or open shape texture subsequent to coloring. If there should arise an occurrence of piece products texture hydro-extractor machine is utilized for water expelling. Amid de-watering process extra substance is utilized for relax the texture. Distinctive kinds of operational parameter are controlled amid de-watering process.

Subsequent to coloring process from the coloring machine then the textures are prepared for crushing. It is the procedure to expel the water from the textures in part by crushing. Pressing machine assumes a critical job in weave completing segment of the sew textures. Crushing machine is utilized for decreasing water from the wet texture. It lessens the water substance of the texture.

1.2 Object of the study:

- To know functions of various parts of De-watering m/c.
- To know the process flow chart of De-watering m/c.
- To the impact of De-watering m/c on diameter.
- To the impact of De-watering m/c on GSM.
- To the impact of De-watering m/c on Stitch length.

Chapter 02

Literature Review

2.1 Flow chart of Squeezer machine:

Turntable (Basket)

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De-twister

↓

Ring Guide Speeder

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Feed Roller

↓

Dancing Roller

↓

Water Pander

↓

Balloon former

↓

Extracting Squeezer

↓

Dancing roller

↓

Softener padder

↓

Balloon Former

↓

Padding squeezer

↓

Main squeezer

↓

Conveyors Blanket

↓

Politer

↓

Delivery basket

2.2 Working Principle of Dewatering Machine:

In the wake of finishing the coloring procedure from the coloring m/c then the textures are prepared for de-watering. In de-watering m/c rounded textures are predominantly prepared. There is an attractive sensor which scene the spot of the texture and its bearing and hand the texture over inverse heading to expel curve consequently. Here dewatering is performed De-watering is the procedure to expel the water from the texture totally by crushing and it is finished by the padder. An appropriate expander is utilized before the texture is gone through the touch of the padders, which extends the texture level shrewd and change the width.

1. At first the texture takes from the conveys to nourish the highest point of the machine tower .where two roller get the texture.
2. At that point the texture goes into 4 roller in this machine.
3. At that point stream air into the texture surface.
4. Here a Padder are place in this machine which through weight in the texture surface. High weight is required for light shade and low weight are required for profound shade of texture.
5. Here one control board are place in this machine. Which control the machine procedure?
6. In this machine from fumes roller the texture stream in to the free roller and from free roller the texture stream to the transport line. At that point the texture turns out.
7. To control the texture dia by the shape which are place in this machine?
8. Finally process in this machine the texture conveyance by two conveyance roller. Also, two collapsing roller are place in this machine which are overlay the conveyance texture keep into the texture conveys.

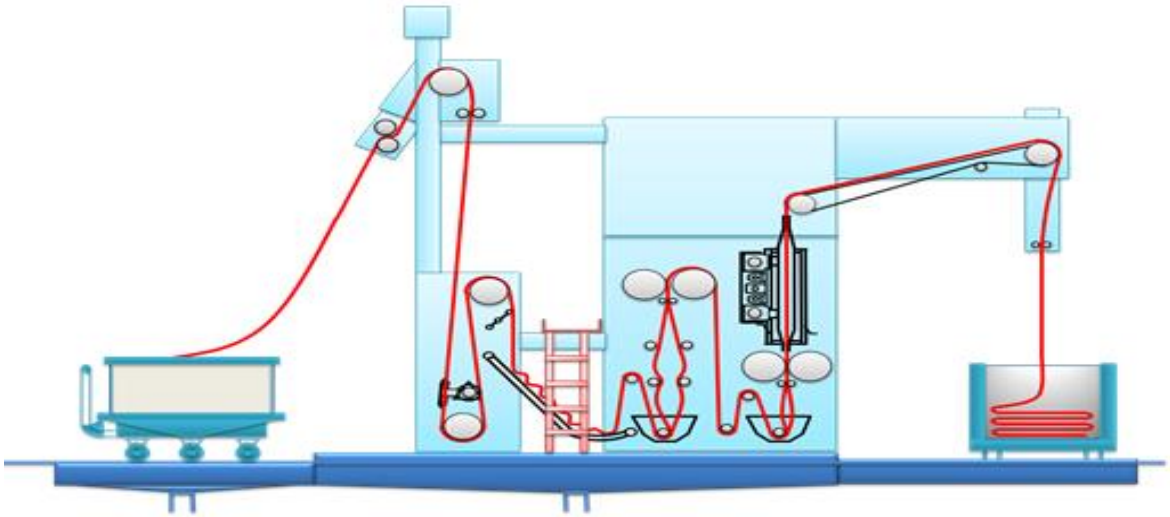


Fig: Passage Diagram of The fabric in Dewatering Machine.

The expander width is balanced as S/J-20%, PK-25%, Int.- 35%, Lacoste-40% more extensive than the required width. There is a couple of elastic covered padder, where water is expelled from texture when gone through its pinch.

Regularly squeezer contain single or twofold padders where,

- One for evacuating water and
- Other for applying completing synthetics, for example, conditioner.

In any case, this completing is done just for the cylindrical texture. Open widths sewed textures are connected completing treatment later in stenter machine.
Here present the blower which given pack air to shape expanding before going through the padder. This inflatable expel wrinkle stamp however not shape the most extreme inflatable generally shrinkage increment.

In feed and out feed navigates which present in albatross control the accompanying capacities by over nourishing framework.

- To control the width (dia) of the fabric.
- To control the spiraled of the fabric.
- To control the crease mark of the fabric.
- To control the length of the fabric.

2.3Machine specification:

Brand name: CORINO MACHINE
Type/model no:-ST2-
Origin: Italy
No of motor: 12
Price of machine: 1.6 corers
Year: 2005 Suitable
Fabric: Wet tubular knitted Fabric

Fig: squeezing machine front and back view

2.4Operational Parameter of Dewatering Machine:

Speed: As much as could be allowed (40-60 m/min). Higher the GSM bring down the speed.

Over feed: As required. Higher the GSM higher the over feed.

Padder weight: 3-7 bar as required. Higher the GSM bring down the padder weight.

Width: Fabric width is balanced according to required width.

2.5Main parts of the machine:

1. Turn table
2. Can
3. De-twister
4. Motor
5. Padder roller
6. Water tank
7. Compress air meter
8. Twister
9. Monitor
10. Spiraled roller
11. Shape
12. Conveyor belt
13. Delivery roller

2.6 Function of machine parts:

1. Turn Table-It controls the texture revolution. Turn table is driven by engine; it can turn clockwise or on the other hand anticlockwise as indicated by untwist requiring.

2. De-twister-By the de-twister rope shaped texture progress toward becoming untwists structure (spiraled control) De-twister will auto de-contort the restricted texture and in feed easily.

3. Engine Produce pack air in tuber texture.

4. Padder roller-To make weight into the texture by this elastic covered roller

5. Tank-Two tank are place in this machine. A. concoction tank B. water tank. Best of the tank stream water to the texture and base tank seepage.

6. Weight meter-Pressure control of machine for texture. A .Greymeliance texture required weight: 4KG B. White Fabric required weight: 4KG

7. Screen to control all procedure or machine

8. Spiraled roller-spiraled control+ Twisting control by this roller

9. Squeezer-Squeezer comprises of 2 sets elastic roller and 2 sets Pneumatics chamber. The weight of the pressing roller is balanced by two sets lessen valve. The water pressing gadget and conditioner articulation gadget are driven by one engine independently; the two engines are constrained by inverter.

10. Shape-Diameter/wrinkle control of the texture is can be utilized shape just without Rib texture.

11. Transport line the texture goes into spiraled roller to collapsing roller/conveyance roller.

12. Collapsing/Delivery roller-By collapsing roller overlap the texture keeps into the texture conveys.

13. Strain Regulator-Set with a guideline protection from alters pressure between crushing roller and conveyance roller.

2.7 Function of the Machine:

1. Used to evacuate abundance water after pretreatment procedure and coloring.
2. Conveyed texture to make Free State.
3. Before pressing inflatable is shaped with the assistance of compacted air going by a spout or air sprayer.
4. This Machine is utilized for impregnating relaxing fluid to wet procedure of twofold plunge the rounded texture.
5. It can control the measurement of texture and GSM and shrinkage by over encouraging component.
6. To grant delicate completion to the texture by utilizing required conditioner.
7. It is high effective and simple to work.

2.8 Maintenance and Operation:

1. Proper inflatable structure by blower air generally wrinkle mark shows up.
2.Padder contract point modify superbly as indicated by the texture development generally precise water won't expel.
3. Albatross must be perfect each a couple of hours after the fact.

2.9 Use of Chemicals:

1. Silicon: For utilizing silicon to expand delicate quality of texture

2. Conditioner: For utilizing Buyer Requirement. To delicate the texture from hard texture. Conditioner is connected to mollify the texture just as it improves the hand feel.

2.10 Controlling focuses or Control framework:

1.Overfeed control-As required. Higher the GSM higher the over feed.

2.Pressure-3-7 bar as required. Higher the GSM bring down the padder weight.

3. Speed control-As much as could reasonably be expected (40-60 m/min). Higher the GSM bring down the speed.

4. Width control-Fabric width is balanced according to required width.

2.10.1 Machine Checking focuses:

1.To check m/c region clean

2. To check m/c engine

3. To check utility

4. To check roller

2.10.2Fabric checking focuses:

1. To check shade.

2. To check breadth

3.To check GSM

4. To check texture issues (shrinkage, wrinkle mark, spiraled)

2.10.3 Power utilization:

Voltage: 500V

Recurrence: 55Hz

Greatest power: 25kwatt

2.10.4 Manpower Required:

1. Laborer: 2
2. Administrator
3. Aide

2.10.5 Production:

Limit: 8 tones/move

Real creation: 5or 6 tones/move.

2.10.6 Utility:

1. Water
2. Power

2.10.7 Controlling Point:

1. Breadth setting must be exact.
2. Abundance padder weight may cause texture harm. Padder weight relies upon texture development.
3. Speed must be ideal.
4. Higher the texture speed leads less evacuation of water.
5. Overload.

2.10.8 Find out the restrictions and deficiencies of the machine and Exhort for evacuating these:

1) Workers does not record the weight, in dia and out dia of various texture in record book

2) Workers set the weight of press roller for various texture same. Be that as it may, higher GSM texture needs more weight than lower GSM texture. So evacuation of abundance water isn't adequate

3) Machine keep up are troublesome and exorbitant.

2.10.9 Pre-Caution:

• For your own security watch the texture section

• Wrong section causes mishaps

2.11Stenter Machine:

A machine or mechanical assembly to extend or stentering textures. The motivation behind the stenter machine is to bringing the length and width to pre decide measurements and furthermore for warmth setting and it is utilized for applying completing synthetic compounds and furthermore shade variety is balanced. The principle capacity of the stenter is to extend the texture widthwise and to recuperate the uniform width.

2.11.1Elements of Stenter Machines:

1. Heat setting is finished by the stenter for lycra texture, engineered and mixed texture.
2. Width of the texture is constrained by the stenter.
3. Finishing substance apply on texture by the stenter.
4. Loop of the sew texture is controlled.
5. Moisture of the texture is constrained by the stenter.
6. Spiraled constrained by the stenter.
7. GSM of the texture is constrained by stenter.
8. Fabric is dried by the stentering procedure.
9. Shrinkage property of the texture is controlled.
10. Curing treatment for gum, water repellent texture is finished by the stenter.

2.11.2Parts of Stenter Machine:

- Paders
- Weft straightner (Mahlo)
- Burners 10
- Heat recuperation
- Attraction rollers
- Circulating fans 10,8
- Exhaust fans 2

- Winder 2
- Clips
- Pins
- I.R
- Cooling drums 2

2.11.3Stenter Machine Process Requirements:

- Equipment utilized
- Following gear is utilized for Stenter Finishing process
- Bruckner stenter machine

2.11.4Key Accessories:

- Following gear is utilized for Stenter Finishing process:
- pH papers,
- Buckets,
- Sewing machine,
- Measuring balance,
- Measuring tape,
- Scissors, and

2.11.5Materials/Chemicals Used:

The materials and synthetic concoctions utilized in the stenter machine process for TC texture, 100% Cotton texture, CVC texture and for Water Repellent texture are depicted underneath.

Types of Fabric	Materials/Chemicals Used
TC Fabric	Softener Additive Stiffener Acetic acid to adjust the pH

Types of Fabric	Materials/Chemicals Used
100 % Cotton Fabric (soft)	Softener Additive Acetic acid to adjust the pH
100% Cotton Fabric (anti shrinking)	Softener Additive Resin Catalyst Wetting agent (when chemical absorbency is poor) Acetic acid to adjust the pH
CVC Fabric (medium touch)	Softener Additive Stiffener Acetic acid to adjust the pH
CVC Fabric (soft)	Softener Additive Acetic acid to adjust the pH
Water Repellent Fabric	Hydrophobic agent Stiffening agent Softener Additive Acetic acid to adjust the pH.

2.11.6 Wellbeing:

- Following Do's and Don'ts are to be pursued amid activity:
- Do not wear free dress that may entrap with the machine parts while running.
- Always wear elastic shoes.
- Never contact the uncurling roller while running the machine.
- Be cautious in manual sticking of texture.
- Do not embed hands between the rollers amid running the machine.
- Wear an eye goggle and hand gloves amid planning of synthetic arrangement.
- Do not contact the padder amid task.
- Be cautious about the selvage cutting edge.
- Be natural about unstable synthetics.

2.11.7 Checklist before Production:

• Operator must check the accompanying things before completing, restoring, heat setting and extending process in Stenter machine process:

• Machine parameters are set by program.

• Required labor is accessible for feed side and conveyance side.

• Required synthetic compounds are accessible.

• Batch for Feed side is set.

• Lead material is guided up through entry point to administrator station.

• Empty trolley is set at conveyance side.

• Ensure the Stenter machine parts as extra.

2.11.8 Task Procedure:

Synthetics are estimated utilizing the electronic equalization and taken in containers independently. Synthetic substances are weakened with hot or typical water dependent on the references of the compound writing given by the concoction organization.

Blending tank is topped off with half of water to the required arrangement level and after that synthetic substances are emptied independently into the tank through a bit of channel fabric. At that point water is added to get the objective arrangement.

Synthetic concoctions are mixed for five to seven minutes by the electrical blender impeller in the blending tank and afterward send to the machine through. At that point administrator will run 1-meter texture as a preliminary raced to check the parameter(s), delicate quality and hardness, shade coordinate, and so on which is required by the client. A little bit of texture from that preliminary part is given to the move in-control to check the parameter(s).

On the off chance that the preliminary texture matches with the client endorsed test, at that point generation officer chooses to go for the mass creation and administrators begins the machine for creation.

For the mass generation synthetic concoctions arrangement is readied utilizing the equation referenced above and filled the substance trough.
The limit of each tank is 400 liter.

2.11.9 Item Quality Check:

Shade Check: During the preparing of mass creation of any bunch, administrator checks the shade in the Stenter machine process. On the off chance that any deviation is recognized he educates the mindful move officer who makes the important move to conquer the issue. In the event that the officer neglects to correct the issue he advises the division head who at last gives the choice.

Blame Check in Stenter Machine Process: The administrator checks for Knitting deficiencies (for example twofold yarn, yarn tainting, fly yarn, and so forth.), Spinning issues (for example thick and slender yarn, barrel mark, and so forth.) and different flaws (for example color oppose mark, band line, synthetic substances spots, torn and opening, variety of shade, texture structure, and so forth.) amid the procedure.

In the event that minor flaws happen inside the half moves of texture (while running around 20-25 moves of texture) which isn't come about because of past procedure and furthermore not recorded on the clump card the vital action(s) to be taken is as per the following:

Check the feed side to ensure that these flaws didn't happen from the past procedure. Stop the machine to recognize whether these flaws are happening because of machine deficiencies (for example from padder, chain bar, air pipe, and so on.) or the issues are because of the synthetic concoctions (check tidiness, setting of machine parameter(s) and substance synthesis).

In the event that any spot on the texture, which isn't come about because of the past procedure, is recognized amid preparing, it shows that the grouping of synthetic pouring in the blending tank isn't right which brought about terrible concoction response. In the event that this occurs, the procedure ought to be quickly ceased and mindful officer ought to be educated for examination.

Width Check in Stenter Machine Process: Measure texture width by utilizing an estimating tape and contrast it and the required width that is referenced by creation officer on the cluster card or program.

Structure, Fabric Bow and Slant Check in Stenter Machine Process: Check the plan, bowing and inclining of texture at the conveyance side. Modify the machine by fixing the courses line of the texture for checking the bowing and inclining.
Stick Setting Check in Stenter Machine Process: Check at the conveyance side whether the selvage of texture is disengaged from stick and for least of 0.5″ each side sticking wastage is kept up, if any anomaly found, quickly illuminate the head administrator.

2.12 Q.C. Test Tests:

1-meter test is cut from each cluster amid preparing and are sent to the Q.C. Office for lab testing. In Q.C research facility, these examples are tried by the quality necessity of the client, for example, dimensional dependability test, washing speed, water quickness, light speed, pilling test, crocking (dry and wet) and so forth.

After all vital testing, the outcomes are recorded on the Q.C. Sheet. Allude to Off Line QC Test Specification (Document No. 81-101) for subtleties.

2.12.1 Pertinent Forms and Documents:

• Forms and Documents Used
• The vital structures and reports for completing procedure are recorded beneath :
• Process Batch Card
• Daily Finishing Production Report
• Machine Downtime Report
• Recipe Sheet
• Identification Sticker
• Program Register of Stenter Machine
• Production Register of Stenter Machine

2.12.2 The record stream of Finishing Process is as per the following:

Administrator rounds out the Batch Card and the concerned officer put his mark on it upon confirmation. The Batch Card moves with the texture for the subsequent stage of completing process (e.g. Rounded Compactor, De-water, Drying or Slitting).

The Daily Finishing Production Report is set up to show move savvy day by day creation of completing area of BK. Generation officer gets ready it and sign on it. The division head, Finishing checks the statistical data points and put his mark on it. Completing division records this report for future reference.
Machine Downtime Report is kept up to keep record of any stoppage underway because of machine separate or some other reason. Administrator fills this and the capable officer sign on it upon confirmation

Formula Sheet is utilized to give formula for a specific machine in each move. It is additionally named as the Chemical Consumption Report. Mindful officer gets ready it and the Department Head, Finishing checks and signs on it.

Distinguishing proof Sticker is connected with each texture roll that incorporates the Order number, Customer, Batch/Roll number, Quality, Color/Shade, usable width and creation. This encourages the stores work force to effortlessly store and find a specific move of texture at Finished Goods Stores.

Program Register of Stenter Machine is kept up against Recipe Sheet to monitor the creation advancement of a specific bunch.

Creation Register of Stenter Machine process is utilized to track date shrewd generation subtleties. Administrator rounds this out alongside his comments (assuming any) and this report is recorded for future reference. Connections: Examples of every single pertinent structure and reports are appended.

2.12.3 Compactor Machine:

The compactor machine is utilized in Textile Factory is a compaction machine utilized in material completing of clothing texture. The compactor is a material apparatus which is utilized for weaved texture like pullover, arouse, and interlock, rich, rib and so forth just as cotton mixed texture in rope structure. The compactor is utilized for controlling shrinkage of texture, GSM control and makes compaction the texture long savvy bearing to give over feed to the texture while preparing in nearness of steam and ready to control the shrinkage. The content compactor is utilized as completing machine in the wake of coloring. Open Width Compactor is utilized after Stenter Machine and Tubular Compactor Machine is utilized after Industrial Dryer Machine.

2.12.4 Application of Compactor:

Content compactor is proper for compaction texture for the felt boarding and pre-contracting procedure of unadulterated cotton, mixed cotton and polyester cylindrical textures, the shrinkage of textures can be under 4%. It additionally utilized for material printing and general material assembling in Textile organization.

2.12.5 Capacity of Compactor Machine:

Compactor is essential machine in sew texture completing procedure. There are a great deal of specialized work which are finished by compactor machine. The works are finished by compactor machine are brought up beneath:

1. GSM control of the sewed texture. For high GSM, overload is expanded and texture width is diminished. For low GSM, overload is diminished and texture width is expanded.
2. Control shrinkage

3. Curving control
4. Increment smoothness of texture
5. Warmth setting is done of texture and so on.

2.12.6 Checking Parameters of Compactor Machine:

Following parameters check in compactor machine.

1**. Shade Check:** Shade of the compacting texture is checked in the conveyance side of the machine. The administrator gathers the texture and contrast the shade of the texture and the purchaser's affirmed swatch.

2. **Width Check:** Operator estimates the width of the texture with the estimating tape and contrasts it and the purchaser's prerequisite.

3**. Weight Check:** Weight of the texture is controlled by GSM check. Administrator checks the GSM of the texture by GSM shaper and electric equalization.

4**. Edge Line Checking:** Two edges of the texture is check in conveyance side. In the event that any fix line is distinguished, which regularly happens from the expander it ought to be associated.

5**. Design and Slanting:** Operator checks plan and inclining of the texture in the conveyance side of the machine.

6**. Fabric Faults:** Various sorts of texture quality are estimated in the conveyance side of the texture.

2.12.7 Sorts of Compactor Machine:

Compactor machines are two sorts. They are-

1. Tubular compactor
2. Open compactor

2.12.8 Tubular Compactor:

Tubular compactor is utilized after hydro-extractor, de-watering and dryer. By the compactor machine, compacting is accomplished for control the shrinkage of the texture. Here, various sorts of disconnected nature of the texture are estimated.

2.12.9 Elements of Tubular Compactor:

Following destinations are accomplished by the cylindrical compactor. They are-

1. Shrinkage of the texture is constrained by the compactor.
2. Fabric width is constrained by the compactor.
3. GSM of the texture is balanced by the compacting.
4. Fabric smoothness is accomplished by the compactor.
5. Heat setting of texture for Lycra is finished by rounded compactor.

2.13 Working Procedure of Tubular Compactor:

The treatment of weave textures in cylindrical structure on the Tubular compactor fulfills the demanding guidelines set by clients with the goal that article of clothing sewed from the texture completed on this machine will yield the most minimal lingering shrinkage esteems.

1. Width control through a steeples customizable unique rounded texture spreader driven by factor speed engine for bending free texture direction.
2. Stamping with a sans condensate steam box which is effectively worked and totally produced using impeccable still.
3. Compacting through two Nomex felt belts.
4. Calendaring while at the same time going between the felt belt and the warmed contracting rollers.
5. Accuracy plaiting with programmed stage level alteration constrained by collapsed texture tallness. On the other hand, a texture moving framework can be given.

The texture is nourished through the controlling framework and stretcher which at that point takes the texture through the steam box onto the felt of the twin compacting units.
At the texture conveyance, the machine is furnished with an exactness plaiting gadget with its stage. The tallness of the stage is controlled naturally and is flexible as per the plaited texture stature.
An optical texture thickness estimating sensor can give the way to naturally control the compaction of a cylindrical compactor to accomplish the ideal course check. A programmed compaction control framework dependent on thickness estimation and control will:

- Eliminate over-and under-weight texture.
- Reduce or dispose of punch-weight estimations.
- Provide predictable outcomes from all administrators.
- Result in uniform texture, crease to-crease.
- Yield unsurprising lingering shrinkage.

2.13.1 Specification of Tubular Compactor Machine:

Brand name	Ferraro
Model no.	Complex/Fv200
Manufacturing country	Italy
Speed range	13-22 m/min
Temperature	110-140C
Used utilities	Electricity, Compressair, Steam
Production capacity	4 ton/day
Maximum width	86”
Minimum width	36”
Applied for	Tubular width

2.13.2 Open Width Compactor:

Open compactor is utilized for compacting the open structure texture. Here, cutting machine is utilized for open the texture from the rounded structure.

2.13.3 Highlight of Open Width Compactor:

Flawless sanforising completing of sew textures.

1. Ideally reasonable for in-accordance with stenter machines.
2. Effective shrinkage control
3. A.C. Inverter drives, PLC with contact screen utilized.
4. Equipped with modem availability and web based investigating framework.
5. Metal locator.

2.13.4 Working Procedure of Open Width Compactor:

Open Width Compactor is reasonable for open width sew textures to accomplish accurate dimensional strength and a delicate vibe. The machine for the most part comprises of a sustaining outline with focusing gadget and driven parchment rollers, a leveling stenter outline with overload roller and brush sticking game plan.

The passage area of Pin Frame is furnished with edge spreaders IR In-Feed gadget, a S.S. manufactured steaming unit for uniform soaking of the texture. The Steaming Device has treated steel sliding screens that enable steam to stream just according to the width of the texture.

A low contact Gluing and Drying unit is given a hardened steel trough. Four selvedge drying units with infra-Red producers are put on either side of the machine. The conveyance side area comprises of edge dryer, Selvedge trimmer and a suction gadget, Exit roller, Width Adjustment gadget and the drive to the chain are housed in a leave box.
The compacting unit comprises of 2 felt compacting units, every one of them comprising of a Nomex felt approx. 20 mm thick, a steam warmed chromed focus roller of dia. 400 mm, an elastic secured roller driven by factor recurrence drive, a compacting weight roller, a felt tensioning roller and a felt focusing roller. Every unit is furnished with an extraordinary enemy of fiction sheet type shoe constrained by an electrical actuator to control the compressive shrinkage. A texture cooling roller is given after second felt to cool the texture by methods for chilled water dissemination. Texture Tension through the machine is controlled with the assistance of touchy burden cells and variable recurrence drive with PLC and contact screen.

2.13.5 Specification of Open Width Compactor Machine:

Brand name	Ferraro
Model no.	Complex/Fv200
Manufacturing country	Italy
Speed range	15-22 m/min
Temperature	110-130C
Used utilities	Electricity,Compressair,Steam
Production capacity	5 ton/day
Maximum width	86”
Minimum width	36”
Applied for	Open width

2.13.6 Hydro Extractor:

Hydro-Extractors are additionally called Centrifuges. Rotators are utilized for water extraction (dewatering, pre-drying) of material. Estimations of approx. 15% for leftover dampness substance can be accomplished relying upon the sort of material fiber. Axes with punctured drums or bushels (Ø up to approx. 2000 mm) which waver vertically in ball-and-attachment joints suspended on three are delivered in different structures as pendulating, suspension, pen and vertical axes, additionally with supposed skimming bolster direction as coasting bolster rotators or in level resp. vertical game plans as open-width, even and twist shaft axes, and so forth. Most axes have electric drives for rates of approx. 750– 1200 rpm

and are by and large furnished with programmed authority over different extents. For security reasons, an interlocking top is basic on a rotator with the goal that the engine can't be begun until the cover is bolted, nor the top raised until the bin is stationary again after the machine has been halted.

At the point when utilized for dewatering free stock, the cake of free strands is exchanged from the coloring machine to the rotator and hydro-separated before it is kept running into the fiber opener as a starter phase of drying in a punctured drum drier. On the off chance that a drenching axis is utilized, impregnation of the free filaments with turning grease is likewise conceivable. For this situation, the material is stacked into the rotator, alcohol is then siphoned in (until it covers the material), and the merchandise are at last hydro-removed. The benefit of such a strategy lies in the way that a different treatment of When used for dewatering loose stock, the cake of loose fibers is transferred from the dyeing machine to the centrifuge and hydro-extracted before it is run into the fiber opener as a preliminary stage of drying in a perforated drum drier. If an immersion centrifuge is used, impregnation of the loose fibers with a spinning lubricant is also possible. In this case, the material is loaded into the centrifuge, liquor is then pumped in (until it covers the material), and the goods are finally hydro-extracted. The advantage of such a procedure lies in the fact that a separate treatment

of the textile material in an impregnation vat and the reloading of wet goods into the centrifuge are eliminated. Impregnation of textile material in the impregnation basket of a centrifuge is generally quicker and more effective for all processes than in a vat. The centrifugal force which drives the liquor through the goods during centrifuging accelerates penetration. It is possible to carry out several processes one after the other in an immersion centrifuge. In this case, however, separate drain channels and liquor tanks must be provided. The basket of an immersion centrifuge has an outer casing without perforations which surrounds the cylindrical basket of a normal centrifuge (extended conically at the top). By this means, it is possible to fill it with liquor to the level of the upper rim. Only when the basket is set in motion does the liquor, which is driven outwards by centrifugal force, rise up the basket casing and run over the upper rim. Loose fiber material (loose stock) can also be centrifuged continuously. For the dewatering of yarn packages, other possible options besides the asymmetrical dewatering of columns of yarn packages in suitably shaped compartments of the centrifuge include symmetrical dewatering by the rotation of individual packages or columns of yarn packages which involves less risk of package deformation material in an impregnation tank and the reloading of wet products into the rotator are dispensed with. Impregnation of material in the impregnation container of an axis is commonly speedier and more powerful for all procedures than in a tank. The diffusive power which drives the alcohol through the merchandise amid centrifuging quickens infiltration. It is conceivable to complete a few procedures in a steady progression in a drenching rotator. For this situation, in any case, separate channel channels and alcohol tanks must be given. The bushel of a submersion axis has an external packaging without holes which encompasses the round and hollow crate of an ordinary rotator (expanded narrowly at the best). By this implies, it is conceivable to fill it with alcohol to the dimension of the upper edge. Just when the bushel is gotten under way does the alcohol, which is driven outwards by diffusive power, ascend the container packaging and keep running over the upper edge. Free fiber material (free stock) can likewise be centrifuged persistently. For the dewatering of yarn bundles, other conceivable alternatives other than the deviated dewatering of segments of yarn bundles in appropriately formed compartments of the rotator incorporate symmetrical dewatering by the turn of individual bundles or segments of yarn bundles which includes less danger of bundle disfigurement.

2.13.7 Specialized Data:

1. Working width 1300mm
2. Machine speed 5~30M/min
3. Machine for the hydro extractor, conditioner, air expanding kind of cotton sewed cylindrical textures without strain, with textures entwisting, air swell, control of the crushing weight and control of the last width of the texture.
4. Programmed control of the sustaining without strain, no edge mark, last collapsing without extending. Variants with straightforward or twofold pressing and pervading with conditioners.

2.13.8 Points of interest of Hydro Extractor:

1. No disfigurement of the bundles.
2. Phenomenal rewinding properties. Rewinding can even be wiped out in a great deal of cases.
3. Low lingering dampness.
4. Indeed, even moistness circulation through the bundle.
5. Low vitality utilization.
6. Coloring tubes last more.
7. Procedures a wide range of size bundles.
8. Administrator of rotator can likewise stack dryer.
9. Upkeep free brakes.
10. Shut framework for emanating.
11. Low compacted air utilization.
12. Noteworthy vitality reserve funds.

2.13.9 Objectives:

1) To think about a hydro-extractor machine.

2) To think about various pieces of the hydro-extractor machine and their capacity.

3) To think about the working guideline of the hydro-extractor machine.

2.14 Equipment:A hydro-extractor machine.

2.14.1Machine Specification:

Length: 46"

Width: 46"

Stature: 26"

2.14.2 Working Procedure:

1) At the outset, we take the wet articles of clothing from clothes washer in the wake of washing.

2) Then we load the articles of clothing into the hydro-extractor machine as indicated by its ability.

3) After stacking switch on the machine by press begin catch and hold up 5-6 minute.

4) Then stop the machine and empty the articles of clothing from hydro-extractor.

2.14.3 Name of various pieces of Hydro-Extractor:

I) Base drum.

II) Outer Drum.

III) Inner Drum.

IV) Motor.

V) Motor pulley.

VI) M/c Pulley.

VII) Galvanize steel top.

VIII) Centrifugal shaft.

IX) Lock.

X) Ball Bearing.

XI) Water outlet.

2.14.4 The capacity of the machine parts:

Base drum: Base drum holds the upper bit of the hydro-extractor machine.

External Drum: Outer drum opposes the water and it's made of hardened steel.

Inward Drum: It expels abundance water from the articles of clothing by gravitational power.

Engine: Motor is utilized to create the movement and drive the machine.

Enginepulley: Motor pulley is utilized to exchange movement from engine to machine.

M/c Pulley: It gets the movement from the engine through an engine pulley and this pivots the machine parts.

Excite steel top: It's spread the internal drum of the hydro-extractor machine.

Radiating shaft: Centrifugal shaft is pivoted and make the gravitational power that is certain to expel the water from pieces of clothing.

Water outlet: Water outlet is utilized to water out from the hydro-extractor machine.

2.14.5 Working guideline:

The hydro extractor can be done in the accompanying ways:

Crushing: In this stage, the water is evacuated by pressing them with two chambers.

Centrifugation: Centrifugation process evacuate water by Centrifugal power and it is connected to safe yarns, weaved products, and textures.

Steam weight: A rapid steam stream blown all in all width of the extended texture goes through the material and kills the water in overabundance. Extricated water and steam are dense and reused.

Vacuum: This strategy applies vacuum innovation and is utilized to dry exceptionally wet textures or sensitive textures that don't confront the weight of the barrels of a pressing unit, which could adversely influence the surface structure. The extended texture slides open-width over the opening of a barrel formed structure associated with a suction framework. The air drawn from outside evacuates the surpassing water when going through the material fabric.

Chapter-3

Significance & Scope of the Study

3.1. Significance of the Study

We consider weave surface and particular finishing technique by squeezing machine.It's a very important machine because this machine reduces maximum 70% water content. Its helps for fabric dry. If we want we can increase GSM or decrease GSM by squeezing machine. We can also control fabric width by squeezing machine. We can also used softener during squeezing process but we can't use softener during over all printing it's used after squeezing. That's why squeezing machine is so important for knit finishing.

3.2. Scope of the Study

The examination covers a great deal of things which are essential in colored sew texture. Different sections are shaped with essentialness data which can be communicated as-

In chapter-1, a general portrayal of study has been given which additionally incorporates its target.

In chapte-2, writing audit identified with the investigation has been appeared.

In chapter-3, Significance of the investigation has been composed.

Chapter-4 gives the exploration procedure in subtleties

Chapter-5 communicates the result of the investigation

In chapter- 6, a short conclusion has been incorporated.

Chapter 04

Research Methodology

4.1Materials

In our project work, we have taken knit fabric for analysis the fabric. We have taken seven pieces of knitted fabric (1x1 Lycra Rib, 1x1 Rib, 2x1 Lycra Rib, Interlock, SingleJersey, Single Jersey Lycra,Single Pique) as our materials for accomplishing our project work. The name of the sample and their construction & specification are given in below:

- 1x1 Lycra Rib
- 1x1 Rib
- 2x1 Lycra Rib
- Interlock
- Single Jersey
- Single Jersey Lycra
- Single Pique

4.1.1 Specification of 1x1 Lycra Rib:

- Sample Type = 1x1 Lycra Rib.
- Sample Thread = 95% Cotton and 5% Lycra.
- Yarn count = 25 Ne.
- Fabric GSM = 220 gm.
- Stitch Length = 2.69 mm.
- Machine dia = 29 inch.
- Fabric dia = 27 inch

4.1.2 Specification of 1x1 Rib:

- Sample Type = 1x1 Rib.
- Sample Thread = 100% Cotton.
- Yarn count = 25 Ne.
- Fabric GSM = 220 gm.
- Stitch Length = 2.69 mm.
- Machine dia =28 inch
- Fabric dia = 27 inch

4.1.3 Specification of 2x1 Lycra Rib:

- Sample Type = 2x1 Lycra Rib.
- Sample Thread = 95% Cotton and 5% Lycra.
- Yarn count = 30 Ne.
- Fabric GSM = 220 gm.
- Stitch Length = 2.69 mm.
- Machine dia =30 inch
- Fabric dia = 28 inch

4.1.4 Specification of Interlock:

- Sample Type = Interlock.
- Sample Thread = 100% Cotton.
- Yarn count = 34 Ne.
- Fabric GSM = 220 gm.
- Stitch Length = 2.69 mm.
- Machine dia =28 inch
- Fabric dia = 26 inch

4.1.5 Specification of Single Jersey:

- Sample Type = Single Jersey.
- Sample Thread = 100% Cotton.
- Yarn count = 28 Ne.
- Fabric GSM = 220 gm.
- Stitch Length = 2.69 mm.
- Machine dia =28 inch
- Fabric dia = 26 inch

4.1.6 Specification of Single Jersey Lycra:

- Sample Type = Single Jersey Lycra.
- Sample Thread = 95% Cotton and 5% Lycra.
- Yarn count = 30 Ne.
- Fabric GSM = 220 gm.
- Stitch Length = 2.69 mm.
- Machine dia =30 inch
- Fabric dia = 28 inch

4.1.7 Specification of Single Pique:

- Sample Type = Single Pique.
- Sample Thread = 100% Cotton.
- Yarn count = 20 Ne.
- Fabric GSM = 220 gm.
- Stitch Length = 2.69 mm.
- Machine dia =32 inch
- Fabric dia = 30 inch

4.2Methods:

Calculation

4.2.1 Calculation of Diameter:

(Change of diameter during squeezing)

1) For 1x1 Lycra Rib: Change of diameter = Before Dia – After Dia

= 27inch – 27inch

= 0 inch

Change in percentage = Before Dia-After Dia/Before Dia x100

=27inch-27inch/27inchx100

= 0%

2) For 1x1 Rib: Change of diameter = Before Dia – After Dia

= 27inch-28inch

= -1 inch

Change in percentage = Before Dia-After Dia/Before Dia x100

= 27inch-28inch/27inchx100

= -3.70%

3) For 2x1 Lycra Rib: Change of diameter = Before Dia – After Dia

= 28inch-29inch

= -1inch

Change in percentage = Before Dia-After Dia/Before Dia x100

=28inch-29inch/28inchx100 = -3.57%

4) ForInterlock: Change of diameter = Before Dia – After Dia

=26inch-27inch

= -1 inch

Change in percentage = Before Dia-After Dia/Before Dia x100

=26inch-27inch/26inchx100

= -3.70%

5) For single jersey: Change of diameter = Before Dia – After Dia

= 26inch-27inch

= -1 inch

Change in percentage = Before Dia-After Dia/Before Dia x100

=26inch-27inch/26inchx100

= -3.70%

6) For Single Jersey Lycra: Change of diameter = Before Dia – After Dia

= 28inch-29inch

= -1inch

Change in percentage = Before Dia-After Dia/Before Dia x100

=28inch-29inch/28inchx100 = -3.57%

7) For Single Pique: Change of diameter = Before Dia – After Dia

= 30inch-31inch

= -1inch

Change in percentage = Before Dia-After Dia/Before Dia x100

=30inch-31inch/30inchx100 = -3.33%

4.2.2 Calculation of GSM:

1)For 1x1 Lycra Rib:

GSM of Fabric before Squeezing= Cutting swatch weight x100

=2.20 x 100

=220gm

GSM of Fabric after Squeezing= Cutting swatch weight x100

=2.18 x 100

=280gm

2) For 1x1 Rib:

GSM of Fabric before Squeezing= Cutting swatch weight x100

=2.55 x 100

=255gm

GSM of Fabric after Squeezing= Cutting swatch weight x100

=2.58 x 100

=258gm

3) For 2x1 Lycra Rib:

GSM of Fabric before Squeezing= Cutting swatch weight x100

=3.44 x 100

=344gm

GSM of Fabric after Squeezing= Cutting swatch weight x100

=3.47 x 100

=347gm

4) For Interlock:

GSM of Fabric before Squeezing= Cutting swatch weight x100

=2.12 x 100

=212gm

GSM of Fabric after Squeezing= Cutting swatch weight x100

=2.10 x 100

=210gm

5) For Single Jersey:

GSM of Fabric before Squeezing= Cutting swatch weight x100

=1.55 x 100

=155gm

GSM of Fabric after Squeezing= Cutting swatch weight x100

=1.58 x 100

=158gm

6) For Single Jersey Lycra:

GSM of Fabric before Squeezing= Cutting swatch weight x100

=1.39 x 100

=139gm

GSM of Fabric after Squeezing= Cutting swatch weight x100

=1.41 x 100 = 141gm

7) For Single Pique:

GSM of Fabric before Squeezing= Cutting swatch weight x100

=2.18 x 100

=218gm

GSM of Fabric after Squeezing= Cutting swatch weight x100

=2.16 x 100

=216gm

(1) (Change of GSM during squeezing)

1) For 1x1 Lycra Rib: Change of GSM = Before GSM – After GSM

= 220gm-218gm

= 2gm

Change in percentage = Before GSM-After GSM/Before GSM x100

=220gm-218gm/220gmx100 = 0.909%

2) For 1x1 Rib: Change of GSM = Before GSM – After GSM

= 255gm-258gm

= -3gm

Change in percentage = Before GSM-After GSM/Before GSM x100

=255gm-258gm/255gmx100 = -1.176%

3) For 2x1 Lycra Rib: Change of GSM = Before GSM – After GSM

= 344gm-347gm

= -3gm

Change in percentage = Before GSM-After GSM/Before GSM x100

=344gm-347gm/344gmx100 = -0.872%

4) For Interlock: Change of GSM = Before GSM – After GSM

= 212gm-210gm

= 2gm

Change in percentage = Before GSM-After GSM/Before GSM x100

=212gm-210gm/212gmx100 = 0.943%

5) For single jersey: Change of GSM = Before GSM – After GSM

= 155gm-158gm

= -3gm

Change in percentage = Before GSM-After GSM/Before GSM x100

=155gm-158gm/155gmx100 = -1.935%

6) For Single Jersey Lycra: Change of GSM = Before GSM – After GSM

= 139gm-141gm

= -2gm

Change in percentage = Before GSM-After GSM/Before GSM x100

=139gm-141gm/139gmx100 = -1.438%

7) For Single Pique: Change of GSM = Before GSM – After GSM

= 218gm-216gm

= 2gm

Change in percentage = Before GSM-After GSM/Before GSM x100

=218gm-216gm/218gmx100 = 0.917%

4.2.3 Calculation of Stitch Length:

1) For 1x1 Lycra Rib:

Before Squeezing Loop per Inch= 37

Length per Inch= 3.9

Before Squeezing Stitch Length (inch) = Length of Yarn/ Loop per Inch

= 3.9/37

= 0.1054 inch

Before Squeezing Stitch Length (mm) = 0.1054 x 25.4

= 2.69mm

After Squeezing Loop per Inch=36

Length per Inch= 3.9

After Squeezing Stitch Length (inch) = Length of Yarn/ Loop per Inch

= 3.9/36

= 0.1075 inch

After Squeezing Stitch Length (mm) = 0.1075 x 25.4

= 2.73mm

2) For 1x1 Rib:

Before Squeezing Loop per Inch= 36

Length per Inch= 3.9

Before Squeezing Stitch Length (inch) = Length of Yarn/ Loop per Inch

= 3.9/36

= 0.1073 inch

Before Squeezing Stitch Length (mm) = 0.1073 x 25.4

= 2.72mm

After Squeezing Loop per Inch=36

Length per Inch= 3.9

After Squeezing Stitch Length (inch) = Length of Yarn/ Loop per Inch

= 3.9/36

= 0.1083 inch

After Squeezing Stitch Length (mm)= 0.1083 x 25.4

= 2.75mm

3) For 2x1 Lycra Rib:

Before Squeezing Loop per Inch= 36

Length per Inch= 2.5

Before Squeezing Stitch Length (inch) = Length of Yarn/ Loop per Inch

= 2.6/36

= 0.071 inch

Before Squeezing Stitch Length (mm)= 0.071 x 25.4

= 1.83mm

After Squeezing Loop per Inch=36

Length per Inch= 2.5

After Squeezing Stitch Length (inch) = Length of Yarn/ Loop per Inch

= 2.5/36

= 0.073 inch

After Squeezing Stitch Length (mm) = 0.073 x 25.4

= 1.85mm

4) For Interlock:

Before Squeezing Loop per Inch= 36

Length per Inch= 4.3

Before Squeezing Stitch Length (inch) = Length of Yarn/ Loop per Inch

= 4.3/36

= 0.1195 inch

Before Squeezing Stitch Length (mm) = 0.1195 x 25.4

= 3.1mm

After Squeezing Loop per Inch=36

Length per Inch= 4.4

After Squeezing Stitch Length (inch) = Length of Yarn/ Loop per Inch

= 4.4/36

= 0.1222inch

After Squeezing Stitch Length (mm) = 0.1222 x 25.4

= 3.13mm

5) For Single Jersey:

Before Squeezing Loop per Inch= 36

Length per Inch= 3.6

Before Squeezing Stitch Length (inch) = Length of Yarn/ Loop per Inch

= 3.6/36

= 0.1 inch

Before Squeezing Stitch Length (mm) = 0.1 x 25.4

= 2.56mm

After Squeezing Loop per Inch=35.5

Length per Inch= 3.6

After Squeezing Stitch Length (inch) = Length of Yarn/ Loop per Inch

= 3.6/35.5

= 0.1014 inch

After Squeezing Stitch Length (mm)= 0.1014 x 25.4

= 2.59mm

6) For Single Jersey Lycra:

Before Squeezing Loop per Inch= 36.5

Length per Inch=2.7

Before Squeezing Stitch Length (inch) = Length of Yarn/ Loop per Inch

= 2.7/36.5

= 0.073 inch

Before Squeezing Stitch Length (mm)= 0.073 x 25.4

= 1.89mm

After Squeezing Loop per Inch=36

Length per Inch= 2.7

After Squeezing Stitch Length (inch)= Length of Yarn/ Loop per Inch

= 2.7/36

= 0.075 inch

After Squeezing Stitch Length (mm) = 0.076 x 25.4

= 1.92mm

7) For Single pique:

Before Squeezing Loop per Inch= 40

Length per Inch=3.7

Before Squeezing Stitch Length (inch) = Length of Yarn/ Loop per Inch

= 3.7/40

= 0.0925 inch

Before Squeezing Stitch Length (mm) = 0.0925 x 25.4

=2.33mm

After Squeezing Loop per Inch=40

Length per Inch= 3.8

After Squeezing Stitch Length (inch) = Length of Yarn/ Loop per Inch

= 3.71/40

= 0.09275 inch

After Squeezing Stitch Length (mm) = 0.09275 x 25.4

= 235 mm

(Change of Stitch Length during squeezing)

1) For 1x1 Lycra Rib:

Change of Stitch Length = Before Stitch Length – After Stitch Length.

= 2.69mm-2.73mm

= -0.04mm

Change in percentage (%) = Before Stitch Length -After Stitch Length /Before Stitch Length x100

= 2.69mm-2.73mm/2.69mmx100 = -1.49%

2) For 1x1 Rib:

Change of Stitch Length = Before Stitch Length – After Stitch Length.

= 2.72mm-2.75mm

= -0.03mm

Change in percentage (%) = Before Stitch Length -After Stitch Length /Before Stitch Length x100

= 2.72mm-2.75mm/2.72mmx100 = -1.10%

3) For 2x1 Lycra Rib:

Change of Stitch Length = Before Stitch Length – After Stitch Length.

= 1.83mm-1.86mm

= -0.03mm

Change in percentage (%) = Before Stitch Length -After Stitch Length /Before Stitch Length x100

= 1.83mm-1.86mm/1.83mmx100 = -1.64%

4) For Interlock:

Change of Stitch Length = Before Stitch Length – After Stitch Length.

= 3.1mm-3.13mm

= -0.03mm

Change in percentage (%) = Before Stitch Length -After Stitch Length /Before Stitch Length x100

= 3.1mm-3.13mm/3.1mmx100 = -0.97%

5) For Single Jersey:

Change of Stitch Length = Before Stitch Length – After Stitch Length.

= 2.56mm-2.59mm

= -0.03mm

Change in percentage (%) = Before Stitch Length -After Stitch Length /Before Stitch Length x100

= 2.56mm-2.59mm/2.56mmx100 = -1.17%

6) For Single Jersey Lycra:

Change of Stitch Length = Before Stitch Length – After Stitch Length.

= 1.89mm-1.92mm

= -0.03mm

Change in percentage (%) = Before Stitch Length -After Stitch Length /Before Stitch Length x100

= 1.89mm-1.92mm/1.89mmx100 = -1.59%

7) For Single Pique:

Change of Stitch Length = Before Stitch Length – After Stitch Length.

= 2.33mm-2.35mm

= -0.02mm

Change in percentage (%) = Before Stitch Length -After Stitch Length /Before Stitch Length x100

= 2.33mm-2.35mm/2.33mmx100 = -0.86%

Chapter 05

Analysis & Findings

5.1 Diagram of De-watering machine:

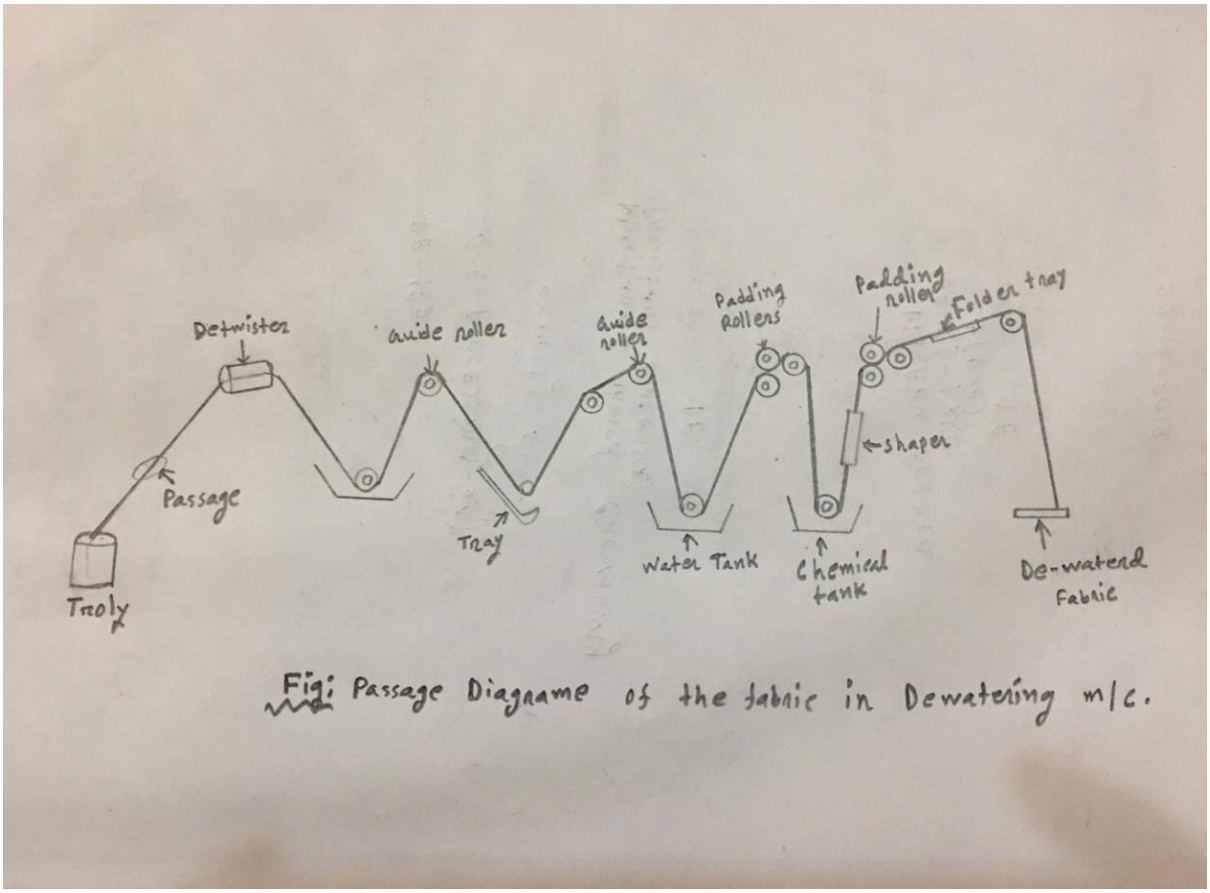


Fig: Passage Diagrame of the fabric in Dewatering m/c.

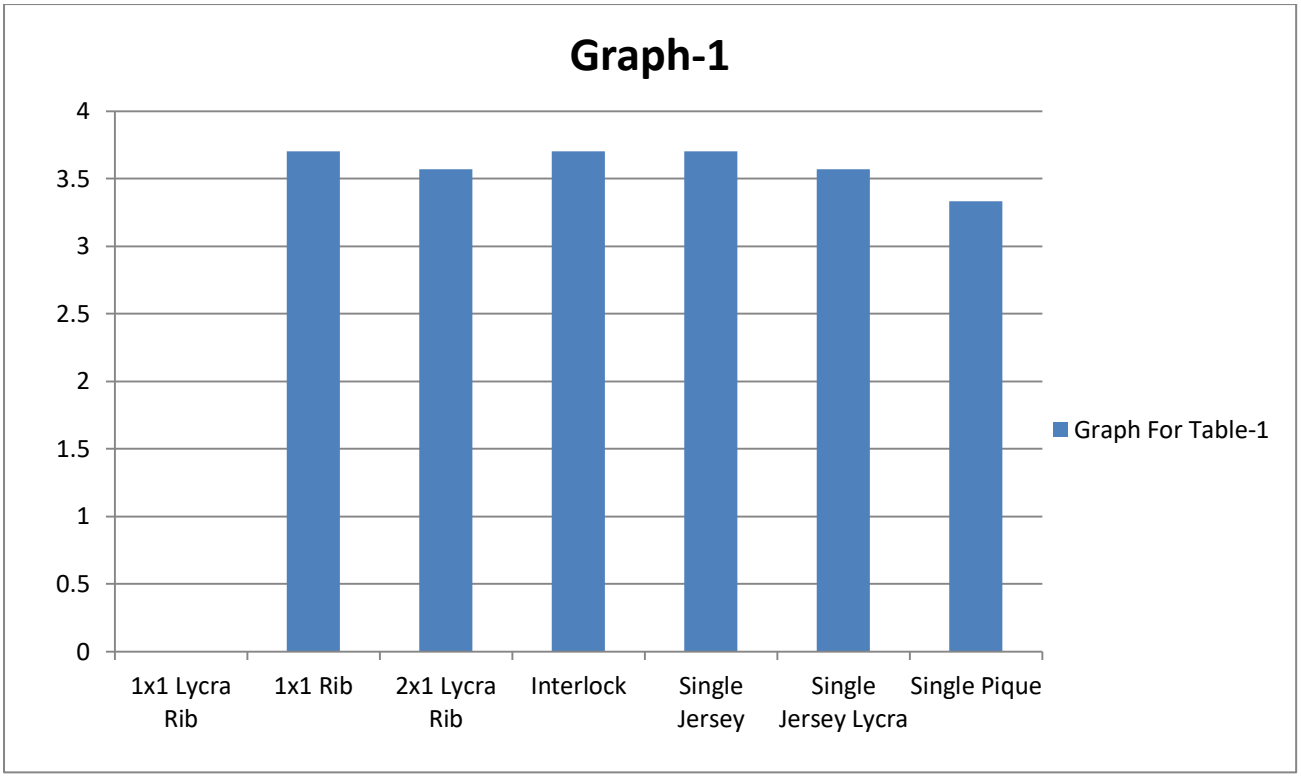
At first, We input the fabric to machine dia. Then We started the machine. Then the fabric are running into the passage to passing de-twister. Then the fabric are passing by the guide roller. Then the fabric are passing into tray and also passing guide roller, When are removed extra water and fall into water tank. Then the fabric are passing into padding rollers and extra chemical fall into the chemical tank. Then the fabric are passing into shaper and padding roller. Then the fabric are passing on the folder tray. Then we collect to Dewatering fabric into trolley.

We observed seven sample of fabric such as: 1x1 Lycra Rib, 1x1 Rib, 2x1 Lycra Rib, Single Jersey, Single Jersey Lycra, and Single Pique for change of diameter during squeezing. So we describe about Change of Diameter during Squeezing in below_

5.2 Change of diameter during squeezing:

Table-1(change of diameter during squeezing)

SL NO.	Sample Name	Dia of Fabric Before Squeezing	Dia of Squeezer	Dia of Fabric After Squeezing	Change of diameter	Change in percentage (%)
1	1x1 Lycra Rib	27inch	29 inch	27 inch	0 inch	0%
2	1x1 Rib	27 inch	28 inch	28 inch	1 inch	3.70%
3	2x1 Lycra Rib	28 inch	30 inch	29 inch	1 inch	3.57%
4	Interlock	26 inch	28 inch	27 inch	1 inch	3.70%
5	Single Jersey	26 inch	28 inch	27 inch	1 inch	3.70%
6	Single Jersey Lycra	28 inch	30 inch	29 inch	1 inch	3.57%
7	Single Pique	30 inch	32 inch	31 inch	1 inch	3.33%



For 1x1 Lycra rib: Here the dia of squeezer 29 inch and use 1x1 Lycra rib. At 1st we measured fabric dia before squeezing then we measured fabric dia after squeezing then we minus before fabric dia from after fabric dia then we got change of diameter 0 inch**.** And another thing is if we minus before fabric dia to after fabric dia and divided by before fabric dia and measured by percentage then we got change in percentage. Here before fabric dia and after fabric dia are same so its result change of diameter and change in percentage both are 0%.

For 1x1 rib: Here the dia of squeezer 28 inch and use 1x1 rib. At 1st we measured fabric dia before squeezing then we measured fabric dia after squeezing then we minus before fabric dia from after fabric dia then we got change of diameter -1 inch. And another thing is if we minus before fabric dia to after fabric dia and divided by before fabric dia and measured by percentage then we got change in percentage. Here before fabric dia and after fabric dia are not same so its result change of diameter -1inch and change in percentage are -3.70%.

For 2x1 Lycra Rib: Here the dia of squeezer 30 inch and use 2x1 Lycra Rib. At 1st we measured fabric dia before squeezing then we measured fabric dia after squeezing then we minus before fabric dia from after fabric dia then we got change of diameter -1inch. And another thing is if we minus before fabric dia to after fabric dia and divided by before fabric

dia and measured by percentage then we got change in percentage. Here before fabric dia and after fabric dia are not same so its result change of diameter -1inch and change in percentage are -3.57%.

For Interlock: Here the dia of squeezer 28 inch and use interlock. At 1st we measured fabric dia before squeezing then we measured fabric dia after squeezing then we minus before fabric dia from after fabric dia then we got change of diameter -1inch. And another thing is if we minus before fabric dia to after fabric dia and divided by before fabric dia and measured by percentage then we got change in percentage. Here before fabric dia and after fabric dia are not same so its result change of diameter -1inch and change in percentage are -3.70%.

For Single Jersey: Here the dia of squeezer 28 inch and use Single Jersey. At 1st we measured fabric dia before squeezing then we measured fabric dia after squeezing then we minus before fabric dia from after fabric dia then we got change of diameter -1inch.And another thing is if we minus before fabric dia to after fabric dia and divided by before fabric dia and measured by percentage then we got change in percentage. Here before fabric dia and after fabric dia are not same so its result change of diameter -1inch and change in percentage are -3.70%.

For Single Jersey Lycra: : Here the dia of squeezer 30 inch and use Single Jersey Lycra. At 1st we measured fabric dia before squeezing then we measured fabric dia after squeezing then we minus before fabric dia from after fabric dia then we got change of diameter -1inch.And another thing is if we minus before fabric dia to after fabric dia and divided by before fabric dia and measured by percentage then we got change in percentage. Here before fabric dia and after fabric dia are not same so its result change of diameter -1inch and change in percentage are -3.57%.

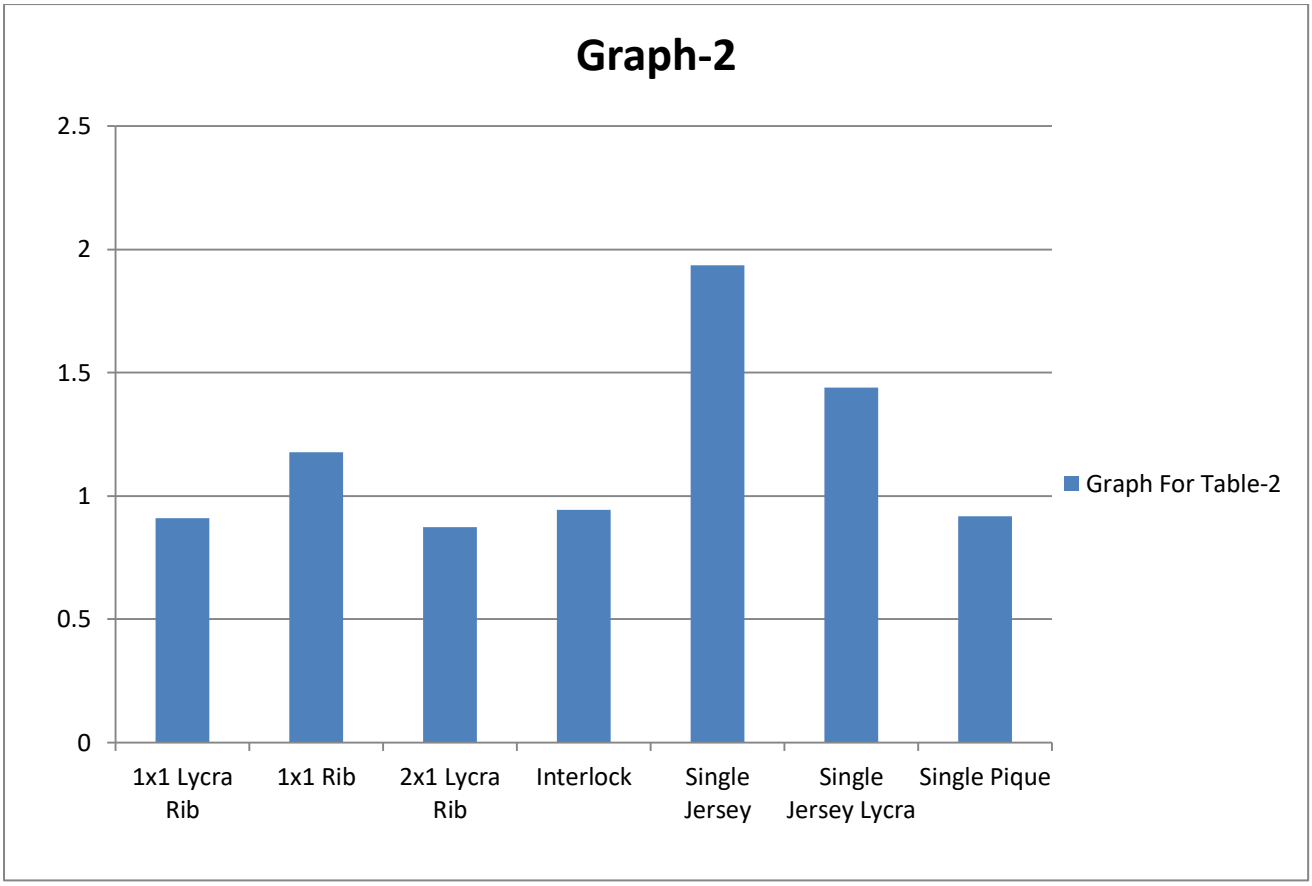
For Single Pique: Here the dia of squeezer 30 inch and use Single Pique. At 1st we measured fabric dia before squeezing then we measured fabric dia after squeezing then we minus before fabric dia from after fabric dia then we got change of diameter -1inch.And another thing is if we minus before fabric dia to after fabric dia and divided by before fabric dia and measured by percentage then we got change in percentage. Here before fabric dia and after fabric dia are not same so its result change of diameter -1inch and change in percentage are -3.33%.

We observed seven sample of fabric such as: 1x1 Lycra Rib, 1x1 Rib, 2x1 Lycra Rib, Single Jersey, Single Jersey Lycra, and Single Pique for change of GSM during squeezing. SoWe describe about Change of GSM during Squeezing in below_

5.3Change of GSM during squeezing:

Table-2(change of GSM during squeezing)

SL NO.	Sample Name	GSM of Fabric Before Squeezing	GSM of Fabric After Squeezing	Change of GSM	Change in percentage (%)
1	1x1 Lycra Rib	220gm	218gm	2gm	0.909%
2	1x1 Rib	255gm	258gm	3gm	1.176%
3	2x1 Lycra Rib	344gm	347gm	3gm	0.872%
4	Interlock	212gm	210gm	2gm	0.943%
5	Single Jersey	155gm	158gm	3gm	1.935%
6	Single Jersey Lycra	139gm	141gm	2gm	1.438%
7	Single Pique	218gm	216gm	2gm	0.917%



For 1x1 Lycra Rib: Here we used 1x1 Lycra rib and same dia. At 1st we cut the fabric passing before squeezing and we cut the fabric by GSM cutter then we measured the fabric weight by electric balance then we got GSM of fabric before squeezing. Second time we cut the fabric passing after squeezing and we cut the fabric by GSM cutter then we measured the fabric weight by electric balance then we got GSM of fabric after squeezing . If we minus GSM of fabric before squeezing to GSM of fabric after squeezing then we got change of GSM2gm. And another thing is if we minus before fabric GSM to after fabric GSM and divided by before fabric GSM and measured by percentage then we got change in percentage 0.909%. Here before fabric GSM 220gm and after fabric GSM 218gm.

For 1x1 Rib: Here we used 1x1 rib and same dia. At 1st we cut the fabric passing before squeezing and we cut the fabric by GSM cutter then we measured the fabric weight by electric balance then we got GSM of fabric before squeezing. Second time we cut the fabric passing after squeezing and we cut the fabric by GSM cutter then we measured the fabric weight by electric balance then we got GSM of fabric after squeezing . If we minus GSM of fabric before squeezing to GSM of fabric after squeezing then we got change of GSM -3gm.

And another thing is if we minus before fabric GSM to after fabric GSM and divided by before fabric GSM and measured by percentage then we got change in percentage -1.176%. Here before fabric GSM 255gm and after fabric GSM 258gm.

For 2x1 Lycra Rib: Here we used 2x1 Lycra Rib and same dia. At 1st we cut the fabric passing before squeezing and we cut the fabric by GSM cutter then we measured the fabric weight by electric balance then we got GSM of fabric before squeezing. Second time we cut the fabric passing after squeezing and we cut the fabric by GSM cutter then we measured the fabric weight by electric balance then we got GSM of fabric after squeezing . If we minus GSM of fabric before squeezing to GSM of fabric after squeezing then we got change of GSM -3gm. And another thing is if we minus before fabric GSM to after fabric GSM and divided by before fabric GSM and measured by percentage then we got change in percentage -0.872%.Here before fabric GSM 344gm and after fabric GSM 347gm.

For Interlock: Here we used Interlock and same dia. At 1st we cut the fabric passing before squeezing and we cut the fabric by GSM cutter then we measured the fabric weight by electric balance then we got GSM of fabric before squeezing. Second time we cut the fabric passing after squeezing and we cut the fabric by GSM cutter then we measured the fabric weight by electric balance then we got GSM of fabric after squeezing . If we minus GSM of fabric before squeezing to GSM of fabric after squeezing then we got change of GSM 2gm. And another thing is if we minus before fabric GSM to after fabric GSM and divided by before fabric GSM and measured by percentage then we got change in percentage 0.943%. Here before fabric GSM 212gm and after fabric GSM 210gm.

For Single Jersey: Here we used Single Jersey and same dia. At 1st we cut the fabric passing before squeezing and we cut the fabric by GSM cutter then we measured the fabric weight by electric balance then we got GSM of fabric before squeezing. Second time we cut the fabric passing after squeezing and we cut the fabric by GSM cutter then we measured the fabric weight by electric balance then we got GSM of fabric after squeezing . If we minus GSM of fabric before squeezing to GSM of fabric after squeezing then we got change of GSM -3gm. And another thing is if we minus before fabric GSM to after fabric GSM and divided by before fabric GSM and measured by percentage then we got change in percentage -1.935%. Here before fabric GSM 155gm and after fabric GSM 158gm

For Single Jersey Lycra: At 1st we cut the fabric passing before squeezing and we cut the fabric by GSM cutter then we measured the fabric weight by electric balance then we got GSM of fabric before squeezing . Second time we cut the fabric passing after squeezing and we cut the fabric by GSM cutter then we measured the fabric weight by electric balance then we got GSM of fabric after squeezing . If we minus GSM of fabric before squeezing to GSM of fabric after squeezing then we got change of GSM -2gm. And another thing is if we minus before fabric GSM to after fabric GSM and divided by before fabric GSM and measured by percentage then we got change in percentage -1.438%. Here before fabric GSM 139gm and after fabric GSM 141gm.

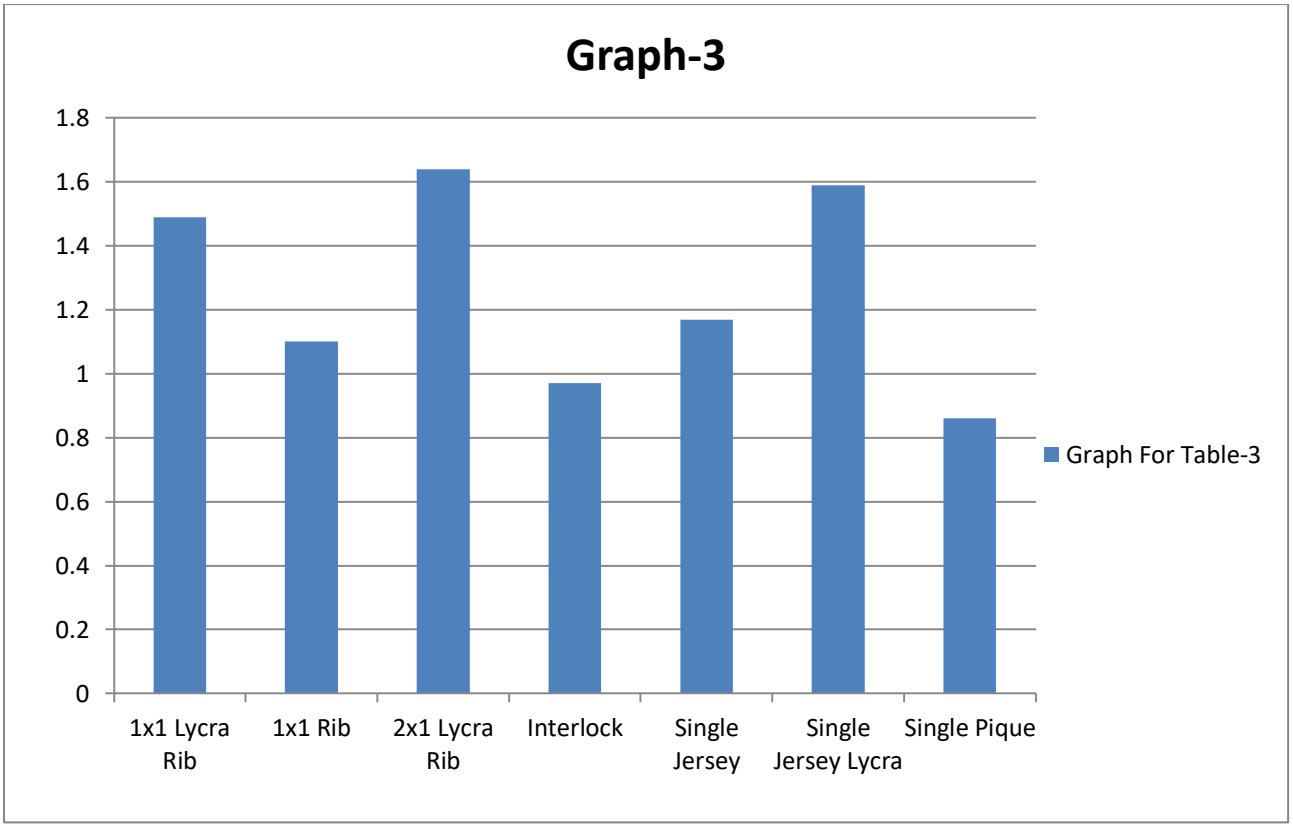
For Single Pique: At 1st we cut the fabric passing before squeezing and we cut the fabric by GSM cutter then we measured the fabric weight by electric balance then we got GSM of fabric before squeezing . Second time we cut the fabric passing after squeezing and we cut the fabric by GSM cutter then we measured the fabric weight by electric balance then we got GSM of fabric after squeezing . If we minus GSM of fabric before squeezing to GSM of fabric after squeezing then we got change of GSM 2gm. And another thing is if we minus before fabric GSM to after fabric GSM and divided by before fabric GSM and measured by percentage then we got change in percentage 0.917%**.** Here before fabric GSM 218gm and after fabric GSM 216 gm.

We observed seven sample of fabric such as: 1x1 Lycra Rib, 1x1 Rib, 2x1 Lycra Rib, Single Jersey, Single Jersey Lycra, and Single Pique for change of Stitch Length during squeezing. So we describe about Change of Stitch Length during Squeezing in below_

5.4Change of Stitch Length during squeezing:

Table-3(change of stitch length during squeezing)

SL NO.	Sample Name	Stitch Length of Fabric Before Squeezing	Stitch Length of Fabric After Squeezing	Change of Stitch Length	Change in percentage (%)
1	1x1 Lycra Rib	2.69mm	2.73mm	0.04mm	1.49%
2	1x1 Rib	2.72mm	2.75mm	0.03mm	1.10%
3	2x1 Lycra Rib	1.83mm	1.86mm	0.03mm	1.64%
4	Interlock	3.1mm	3.13mm	0.03mm	0.97%
5	Single Jersey	2.56mm	2.59mm	0.03mm	1.17%
6	Single Jersey Lycra	1.89mm	1.92mm	0.03mm	1.59%
7	Single Pique	2.33mm	2.35mm	0.02mm	0.86%



For 1x1 Lycra Rib: We minus before stitch length from after stitch length then we got change of stitch length -0.04mm. And another thing is if we minus before stitch length to after stitch length and divided by before stitch length and measured by percentage then we got change in percentage -1.49%.

For1x1 Rib: We minus before stitch length from after stitch length then we got change of stitch length -0.03mm**.** And another thing is if we minus before stitch length to after stitch length and divided by before stitch length and measured by percentage then we got change in percentage -1.10%.

For2x1 Lycra Rib: We minus before stitch length from after stitch length then we got change of stitch length -0.03mm**.** And another thing is if we minus before stitch length to after stitch length and divided by before stitch length and measured by percentage then we got change in percentage -1.64%.

For Interlock: We minus before stitch length from after stitch length then we got change of stitch length -0.03mm. And another thing is if we minus before stitch length to after stitch

length and divided by before stitch length and measured by percentage then we got change in percentage -0.97%.

For Single Jersey: We minus before stitch length from after stitch length then we got change of stitch length -0.03mm**.** And another thing is if we minus before stitch length to after stitch length and divided by before stitch length and measured by percentage then we got change in percentage -1.17%.

For Single Jersey Lycra: We minus before stitch length from after stitch length then we got change of stitch length -0.03mm**.** And another thing is if we minus before stitch length to after stitch length and divided by before stitch length and measured by percentage then we got change in percentage -1.59%.

For single pique: We minus before stitch length from after stitch length then we got change of stitch length -0.02mm**.** And another thing is if we minus before stitch length to after stitch length and divided by before stitch length and measured by percentage then we got change in percentage -0.86%.

Chapter 06

Conclusion

6.1 Conclusion:

Effect of time is very important in textile wet processing. We took as a topic of dewatering machine because It is the most important of textile finishing. It is the process to remove the water form the fabrics partially by squeezing. We analyzed seven sample of fabric and observed diameter, GSM and stitch length.

Toward the end we can say that the interest, the inquiries that were emerges in our brain are been settled subsequent to doing this task. So we can say that our project is successful and thanks to all persons who help us to complete this project.

Chapter 07

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