

**An Analysis
on
The Manufacturing Process
of
TF Holdings Corporation Limited**



TF HOLDINGS CORPORATION LIMITED

Date of Submission: 13 January, 2025



Internship Report
on
An Analysis on the Manufacturing Process
of
TF Holdings Corporation Limited

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Program: MBA

Major in Project Management

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Date of Submission: 13 January, 2025

Letter of Transmittal

Date: 13 January, 2025

Mr. Mahbub Parvez

Associate Professor

Department of Tourism and Hospitality Management

Faculty of Business & Entrepreneurship

Daffodil International University

Subject: Submission of Internship Report on “An Analysis on the Manufacturing Process on TF Holdings Corporation Limited”.

Dear Sir,

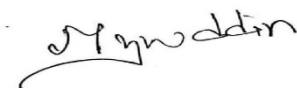
I am pleased to submit my internship report “**An Analysis on the Manufacturing Process of TF Holdings Corporation Limited**” as part of the requirements for the MBA program. This report is a result of my internship experience at TF Corporation Holdings Limited where I had the chance to develop practical insights into the company’s production process.

The report reflects the knowledge I have acquired during my major in Project Management, and I have endeavored to present the information clearly and concisely. I am grateful for your guidance and support throughout this process.

I hope the report meets your expectations and provides valuable insights into TF Corporation Holdings Limited’s production process. I am open to any suggestions or feedback you may have.

Thank you for your time and consideration.

Sincerely,



.....
Golam Mynuddin

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Major in Project Management

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Certificate of Approval

This is to clarify that the internship report titled “**An Analysis on the Manufacturing Process of TF Holdings Corporation Limited**” submitted by Golam Mynuddin, ID: 0242310004083027, Major in Project Management, in partial fulfillment of the requirements for the degree of Master of Business Administration (MBA), has been examined and is herewith approved. I wish his all success and prosperous career.



.....
Mahbub Parvez

Associate Professor

Department of Tourism and Hospitality Management

Faculty of Business & Entrepreneurship

Daffodil International University

Acknowledgement

The successful completion of this report is the result of the support and contributions from many individuals to whom I am deeply grateful. I would like to take this opportunity to extend my heartfelt thanks to everyone who assisted me in preparing this report on **“An Analysis on the Manufacturing Process of TF Holdings Corporation Limited”**.

First and foremost, I am profoundly grateful to Almighty Allah, my Creator and Sustainer, to whom we all ultimately return.

I wish to express my sincere gratitude and respect to **Mr. Mahbub Parvez**, Associate Professor Department of Tourism and Hospitality Management, Faculty of Business & Entrepreneurship at Daffodil International University for his invaluable supervision and guidance throughout the preparation of this internship report. His insights and direction were crucial in shaping the report to its present form.

I would also like to express my sincere gratitude to the administration and staff of TF Corporation Holdings Limited for granting me the opportunity to work with their esteemed organization who provided me with numerous opportunities to gain practical knowledge.

Lastly, I am deeply appreciative of my parents, family members, faculty members at Daffodil International University, friends, seniors, juniors and all other hotel associates who provided valuable advice, suggestions, inspiration, and support throughout the completion of this report.

Executive Summary

This report presents an analysis of the manufacturing process at TF Holdings Corporation Limited, a leading player in the industry. The aim of this study is to evaluate the efficiency, effectiveness, and sustainability of the company's production operations, while identifying key areas for improvement. The analysis covers various stages of the manufacturing process, from raw material procurement to final product delivery, and includes an assessment of the company's operational strategies, workforce management, technology utilization, and quality control measures.

One key finding is that TF Corporation focuses on improving production efficiency and reducing waste. The company uses modern technology and new methods to increase production while keeping product quality high. Their focus on constant improvement helps them stay competitive in the market.

The report also highlights some challenges the production team faces, such as dealing with delays and responding to changes in customer demand. Suggestions to address these challenges include using more flexible scheduling and providing better training for employees to improve overall adaptability.

In conclusion, this report gives a clear overview of TF Corporation Holdings Limited's production process and shows how important it is to the company's success. My internship has helped me gain practical experience and a better understanding of how a well-managed production system helps achieve company goals.

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Chapter-01

Introduction

1.1 Introduction

The manufacturing process is a critical component of any industrial organization, directly influencing product quality, operational efficiency, and overall profitability. TF Holdings Corporation Limited, a prominent player in its industry, is committed to maintaining a robust and efficient manufacturing process that ensures high-quality products while optimizing operational costs. This report provides an in-depth analysis of the manufacturing process at TF Holdings, focusing on key areas such as production methods, resource management, workforce involvement, and technological integration.

Through this analysis, the report aims to evaluate the strengths of the company's current manufacturing operations, identify potential challenges, and propose recommendations for process improvements. By examining the company's approach to manufacturing, this report will provide valuable insights into how TF Holdings can enhance its production efficiency, reduce waste, and foster innovation to maintain a competitive edge in the market. Ultimately, the goal is to support TF Holdings Corporation Limited in refining its manufacturing practices to meet evolving industry demands and ensure long-term success.

A three-month internship at TF Corporation offered an opportunity to observe and understand the company's production process in detail. This hands-on experience provided a comprehensive view of how the company coordinates its production activities, from sourcing materials to delivering finished products. The effective integration of advanced machinery, implementation of rigorous quality control measures, and adoption of methods aimed at optimizing productivity were evident throughout the process, all contributing to maintaining a strong market position.

During the internship, engagement with various stages of the production cycle allowed for valuable insights into resource optimization, waste reduction, and adherence to industry regulations. Participation in discussions that addressed operational challenges provided a firsthand look at how the team worked collaboratively to resolve issues and ensure smooth production flow.

The production process at TF Corporation extends beyond mere manufacturing, embodying innovation, teamwork, and a dedication to excellence. By continuously refining its strategies, the company has strengthened its position within the industry. This report delves into the observations and experiences gathered, offering a detailed review of TF Corporation's production process, highlighting its strengths, and identifying areas where further improvements can be made.

1.2 Background of the Study

The production process is a fundamental factor in the success of any manufacturing business. In today's highly competitive global market, an efficient production system enables companies to meet customer demands, maintain product quality, and operate effectively. A streamlined production process involves several key stages, including raw material procurement, process optimization, quality assurance, and timely delivery of finished goods.

As part of my internship at TF Corporation, I had the chance to delve deeply into the company's production processes. This practical experience allowed me to connect theoretical concepts with real-world practices. I observed how TF Corporation ensures operational efficiency, maintains consistent product quality, tackles production challenges, minimizes resource wastage, and complies with industry regulations.

This internship not only enhanced my knowledge of production processes but also contributed to my overall professional development. The experience has equipped me with the skills and understanding needed to analyze and improve production systems effectively, which will be invaluable in my future career.

1.3 Origin of the Study

This report is the culmination of my internship experience at TF Corporation Holdings Limited in the last three months, which was conducted as a requirement to complete the Masters of Business Administration (MBA) program in Project Management at Daffodil International University. The primary purpose of this internship was to bridge the gap between academic learning and real-life applications that would help me build my personal life more easily in any job. It was my first experience working in the Production department of a large organization.

The internship is considered part of academic studies, through which students can work to acquire their practical knowledge and skills and involve themselves in different business environments around the world. Under the guidance of my supervisor, Mahbub Parvez, Associate Professor, Department of Tourism and Hospitality Management, at Daffodil International University, with the help of the Production team at TF Corporation Holdings Limited, I got to know and observe various Production activities and was able to participate properly in them. Production process of TF Corporation Holdings Limited I have prepared this report based on my internship experience and what I have learned. Through this internship, my journey of the last three months, my practice, challenges, and problems will go on, and a report will be prepared based on all the aspects.

1.4 Objectives of the Study

The report demonstrated the following three objectives:

1. To examine the key stages of the manufacturing process.
2. To explore the role of machinery and technology in the process.
3. To identify the key performance metrics and workflow in production.

1.5 Methodology of the Study

This methodology is primarily designed to collect, interpret, and analyze data on the Production Processes of TF Corporation Holdings Limited Company. Here it is divided into two main parts: the first is data generation, and the second is the data collection method.

1.5.1 Data Sources

Through this report, both primary and secondary issues are highlighted. This resource is provided based on the practices of TF Corporation holding's Production process.

a) Primary Data

During my internship, I collected information directly from TF Corporation holdings Limited. By doing this, I got the opportunity to get information directly from the Production Manager of the Production department of the TF Corporation holdings for the primary data. I mainly got the opportunity to collect information by talking directly with the supervisors, employees, officers, and clients of the TF Corporation holdings company.

b) Secondary Data

The secondary data was collected by me from TF Corporation holding's records, documents, websites, and articles. Basically, the secondary information is given on each company's website. I also looked at other things, like the policy documents, employee handbooks, annual reports, and other official publications provided by the company, and had the opportunity to thoroughly justify them. Which allowed me to observe these production departments more closely during my interview.

1.5.2 Methods of Data Collection

During my internship at TF Corporation holdings Limited, through the practice followed by production process implemented the following methods for saving data:

a) Observation

During the internship, I observed various functions with them, like the production process, material consumptions, and skill assessment. Through these, I got a chance to understand and learn very closely how to face challenges in real life and how to identify success.

b) Interview

At TF Corporation holdings Limited, there was an opportunity to conduct some interviews with the production staff. It was a new experience for me from there. I can learn about their practical criteria for line management, zipper selection, work load, and operating system. And while conducting these interviews, I tried to focus on the main points of the interviewees and what they wanted, and I was able to collect qualitative ones.

c) Document Review

TF Corporation holding's formal Production department and their practices and their documents were discussed in detail, and I was able to learn about their operation manuals, production guidelines and training by knowing and justifying the documents, I got the opportunity to make a proper assessment.

1.6 Limitations of the Study

TF Corporation Holdings is one of the most recognized organizations in Bangladesh, known for its vast operations and significant volume of information. Given the sheer size of the industry, gathering comprehensive data proves to be a challenge. Many times, external access to certain information is restricted, making the process even more difficult. Some of the key obstacles faced include:

Time Constraints: The vast amount of information within such a large organization makes it challenging to review everything in the limited three-month period available. Due to this, a thorough understanding of various aspects is not always possible within the given timeframe.

Limited Access to Information: Like any large organization, TF Corporation Holdings keeps certain information confidential, accessible only to top-level executives. This restriction created a significant hurdle in obtaining a complete overview.

Response Delays: There were instances when securing time from the representatives of TF Corporation Holdings was difficult due to their demanding schedules, causing delays in gathering the necessary information.

Chapter-02

Company Profile

2.1 History

TAT FAI zipper factory established 20 years ago in Dongguan in China with over 250,000 square feet. TAT produce finest metal, nylon, plastic & invisible zipper. The Chinese company name has unique meaning that the two Chinese characters depict the great prosperity and tremendous business accomplishment our company is going to achieve. Together with superior product quality delivery, they formed our founder's business vision.

2.2 Mission

- Our attitude of delicateness, carefulness and devotion toward our customers guarantees their full satisfaction.
- Product quality and proficient service expand market; Improvement and requisition make advancement.
- Quality is what a friend requests. Our customers are our friends. We value our friends by communicating with them diligently. Applying the same principle, we respect our customers by providing them with quality product, which serves as a key to open up the communication door.

2.3 Vision

- Provide products and services of high and consistent quality, ensuring value for money to our customers.
- Endeavour to attain a position of leadership in each category of our businesses.
- Develop our employees by encouraging empowerment and rewarding innovation.
- Promote an environment for learning and personal growth.
- Attain high level of productivity in all our operations through effective utilization of resources and adoption of appropriate technology.
- Promoting inclusive growth by encouraging and assisting our distributors and suppliers in improving efficiency.
- Ensure superior return on investment through judicious use of resources and efficient operations utilizing our core competencies.

2.3 Goal

- ❖ **Quality:** Increase product quality & quantity.

- ❖ **Customer Focus:** Focus on customer needs & demands and maintain long term relationship with customers.
- ❖ **Innovation:** Inventing new products that will help make customers' service easier
- ❖ **Fairness:** Maintaining good relations with shareholders and ensuring fair distribution of profits to them and keeping promises.
- ❖ **Transparency:** The beauty of the organization depends on the transparency, cleanliness and environment of the organization. That's why TF Corporation Holdings Limited Company is aiming to do everything organically.
- ❖ **Continuous Improvement:** Product quality, Communication with customers, Communication with globalization, Working environment, Training facility and training equipment, Compensation system & Reward And privacy & policy.

2.5 Department at TF Corporation Holdings Limited

TF Corporation Holdings Limited Company is mostly well known for its zipper. It has factory both in China & Bangladesh. Recently TAT is going for joint venture with ZDD factory.

Key Employees

Mr. Idoel
MD

Thomas
Factory In-Charge

Mostafa Al Hossain
Asst. General Manager

Md. Abed Ali
Sales Manager

Moly
Sales Manager

Sau Kwan
Supply Chain Head

Joe Shue
Key Account Manager

Mr. Abu Sufiyan
Production Head

Md. Tofayel Ahmed
Finishing In-Charge

2.6 Products and Services

TF Corporation Holdings Limited is one of the leading companies in Bangladesh that manufactures many types of zippers together. The company manufactures products and provides proper services across the country, considering both the customer and the business side. The main service offered by TF Corporation Holdings Limited are described below.

1. Nylon Zipper

TF Corporation Holdings Limited is one of the leading zipper companies in Bangladesh. This company manufactures various types of zippers. Nylon zipper is one of them. TAT FAI Zipper offers nylon zippers in styles like open-end, closed-end, two-way, and by rolls, suitable for garments, bags, and custom applications, ensuring versatility and functionality. RHF Zipper offers customized nylon zipper colors with options like GCC, Pantone, and YKK color cards, sample-based color confirmation, over 300 electroplated teeth styles, and personalized designs including logos and patterns.

2. Invisible Zipper

Invisible Zippers available in a variety of sizes to fit any design. From delicate garments to robust projects, our precise sizing ensures a perfect fit every time. Invisible Zippers are available in custom lengths to suit any project size. Enjoy flexible sizing with a variety of lengths available. Contact sales for spot sizes. Ultrasonic hot melt process, transparent and beautiful while ensuring it will not fall off.

3. Metal Zipper

As a leading manufacturer of custom metal zippers in China, TAT is dedicated to the art of precision. We believe that the finest details define the highest quality, and we collaborate closely with designers to create zippers that perfectly complement your fashion pieces. By focusing on every minute aspect, from the choice of materials to the precision of the mechanism, we ensure that our zippers enhance the functionality and aesthetic of your garments.

2.7 Financial Highlights

Among the leading companies, TF Corporation Holdings Limited is among the top 10. The company has a diverse portfolio across a variety of industries, which sets it apart from the rest

to stay in this position. Due to its quality and the services toward the customer TAT is holding this position so far.

1. Revenue growth

Creativity in the company's work, innovating new products in line with the market, focusing on quality & service, with the ability to grow the business day by day, benefiting from sales both domestically and internationally. The main product of this company is Zipper. Which are helping the company to reach its target of strengthening with maximum revenue. This does their utmost to increase their exposure and expansion in the retail and wholesale markets of Bangladesh.

2. Profitability

In this challenging market, TF Corporation Holdings Limited companies continue to demonstrate their profitability matrix strongly. This is because considering their efficiency, their cost efficiency, value addition process of their product, transportation etc. they are able to fetch a suitable gross and net profit for the company.

This company has been able to maintain a leading position as it occupies a large part of the market in the zipper sector.

3. Dividend Policy

TF Corporation Holdings Limited has been systematically maintaining its strong dividend policy. A large portion of their profits are distributed to each of their shareholder's consistently over time. The fact that the company consistently distributes a large portion of its dividends to shareholders indicates the financial stability of the company. Besides that, TF Corporation Holdings Limited companies honor their promise to return the principal to their investors. For their commitment and dedication to work. TF Corporation Holdings Limited is helping the company to maintain the confidence of its investors and a strong presence in the stock market.

4. Cash flow management

TF Corporation Holdings Limited Company Limited has always done its transactions through cash financing for which it has a strong fear structure. The management of these cash transactions empowers them to increase efficiency, increase production, invest and more efficiently work in financial aspects.

2.8 SWOT Analysis of TF Corporation Holdings Limited

When a company is established day by day its responsibilities are increasing and the company has some strengths and weaknesses as well as new opportunities and threats to pass the time. These goals become the key to strengthen the company towards its strengths by finding the weak points and converting them into strengths. With the establishment of a company, new opportunities and new avenues open up in front of them. At that time, if you can move forward using the right method, success will be determined. In addition to opportunities, there are also threats. The faster the threat can be identified and reduced; the faster success can be achieved.

a) Strengths

1. Strong brand reputation

TF Corporation Holdings Limited Company is undoubtedly one of the main and one of the companies in Bangladesh and China. This company has been helping the garments sector of Bangladesh for a long time by providing them zipper for their readymade garments product and has created trust and brand reputation in people's minds. For this it can be said that the trust of people means TF Corporation Holdings Limited.

2. Commitment to innovation

TF Corporation Holdings Limited Company's great quality is to innovate new products through which customers are able to meet their new needs. By innovating new products helps the company to remain competitive which is enough to capture the market.

3. Strong financial position

TF Corporation Holdings Limited Company's consistent revenue growth along with profitable and prudent financial management makes the financial position of this company very strong.

b) Weaknesses

1. Dependence on domestic market

TF Corporation Holdings Limited company depends on domestic market they sell a little product in international market than domestic. Being dependent on domestic barriers, there is a possibility of being financially damaged at any time in the context of our Bangladesh.

2. High operational cost

The raw material of the zipper most of the time comes from China. Which makes it always challenging to run the company. While incurring additional costs and maintaining profitability.

c) Opportunities

1. Growth of E-Commerce and digital platforms

Increasingly, we see that people are comfortable shopping through online e-commerce. Gradually commerce platforms are becoming a preferred place for people to shop. From there I can say that TF Corporation Holdings Limited company's products are built so that garments factories can easily buy e-commerce platforms. As a result, small garments will get their products within easy reach, which will increase the sales rate of the product and make more profit.

2. Tech sustainability and green initiatives

The world is now leaning towards green forests and people are becoming environment friendly. TF Corporation Holdings Limited companies have the opportunity to lead in this direction through their bio-degradable nylon zipper.

d) Threats

1. Intense competition

Major part of TF Corporation Holdings Limited dividend comes from Zipper. This sector is a competitive sector, as a result of which it is always mandatory to innovate new products. If they are not able to do this, there is always the possibility of a rush and loss in the stock market.

2. Economic instability

The economic market of Bangladesh has always been unstable and fluctuating. Notable among them is the economic market instability of Bangladesh due to political disparity, import export problem, residency problem, etc. There are various types of risks like inflation, currency devaluation. Which affects the entire economic market including the company.

3. Supply chain disruption

TF Corporation Holdings Limited companies use a complex supply chain that can disrupt their supply chain when faced with sudden natural disasters, epidemics, and political disparities. As a result of this disruption, their supply of raw materials and foodstuffs is likely to be affected.

Chapter-03

Analysis

3.1 The Workflow of Manufacturing Process at TF Corporation Holdings Limited

Introduction to the Manufacturing Process

In this chapter, I will walk through the entire process of zipper manufacturing, focusing on the two types of zippers produced in the factory: **Metal Zippers** and **Nylon Zippers**. The production steps, machinery involved, and the workflow from order placement to final delivery will be discussed in detail. Additionally, key performance metrics like machine efficiency, quality checks, and packing processes are highlighted to provide a comprehensive understanding of the factory operations.

Process for Manufacturing Metal Zipper

1) Order Placement and Consumption Setup:

Once an order for **Metal Zippers** is placed, the first step is to input the consumption details into the system. This involves reviewing the **PO (Purchase Order)** sheet to determine the quantity and specifications. The consumption data includes the required materials such as tape color, teeth size, pullers, and other accessories, which are all essential for the production process.

2) Preparation of Zipper Tape:

The first step on the production floor is to prepare the **zipper tape** according to the specifications mentioned in the **PO sheet**. This includes **dyeing** the tape in the required color, ensuring that the shade matches the customer's requirements.

TAT FAI ZIPPER (HK) COMPANY LIMITED
Unit 1107-1111, 11/F, Global Commerce Tower, No. 63 Hong Kong Street, Cheung Sha Wan Roadwork, Hong Kong
Tel: 852 28822828 Fax: 852 28821747

Customer: KASPER
Attention: _____
Color: _____
Lab Dip No.: _____
Refer to PO: _____
TS No.: 28
LP#0520181124
Page 1 of 1

Lab Dip Submission

Buyer	KASPER
Brand	
Vendor	MERIM
Garment Style	S8B13M346E956
Zipper Quality	#3 Invisible Mesh Zipper (#3隱形帶拉鏈+隱形2001拉頭)
Color Name	DTM NAVY (RG #34) (深藍色)
Color Standard	
Light Source	(1) CWF (2) D65

Option A

Option B

Option C

Figure 01: Sending Tape sample to buyer for matching the color standard

3) Dyeing and Ironing of Tape:

After dyeing, the tape is sent to the **ironing section** where it is flattened and made ready for further processing. This ensures the tape is smooth and wrinkle-free before moving on to the next step.

4) Teeth Manufacturing and Sizing:

Next, the **Y-teeth section** handles the production of the **teeth scoops**. The metal teeth are shaped and sized correctly to fit the zipper's overall design. This section uses specialized machines such as the **#3 YG Teeth Scoping Machine** and **#4 YG Teeth Scoping Machine** to process the metal teeth.

5) Electroplating Process (If required):

If the **puller** and **teeth** require electroplating, the parts are sent to the **electroplating section** for a layer of coating, typically to add a glossy finish or to match the color specifications. After the electroplating process is complete, the parts are again sent to the **ironing section** for finishing.

6) Assembly:

The next stage is the **assembly section**, where all components—**tape, teeth, puller, bottom stop, top stopper**—are combined. The necessary parts are attached as per the specifications outlined in the PO, ensuring the zipper functions correctly and meets quality standards.

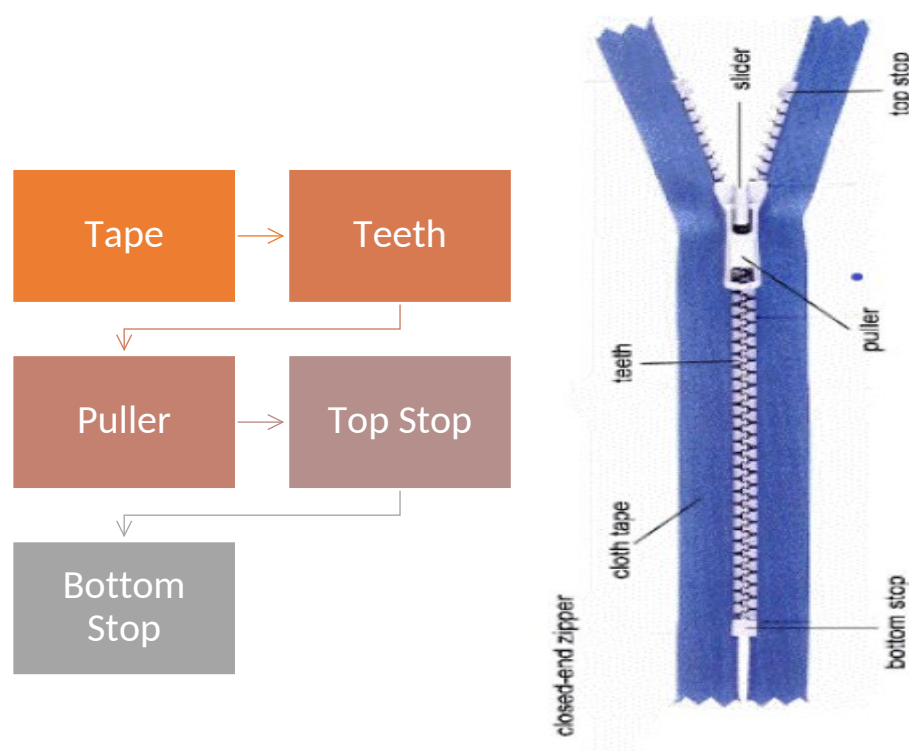


Figure 02: Assembling

7) **Quality Check:**

The quality control process at TF Corporation Holdings Limited is a systematic and thorough procedure aimed at maintaining high product standards. The steps are outlined below:

i. **Visual Inspection:**

Zipper teeth are checked for proper alignment and interlocking.

Tape is examined for defects such as tears, stains, or uneven dyeing.

Stitching and overall assembly are reviewed to ensure components like pullers, bottom stoppers, and top stoppers are correctly positioned and secure.

ii. **Functional Testing:**

- **Smooth Operation Test:** Zippers are tested to ensure the puller moves effortlessly along the track.
- **Tensile Strength Test:** Products are subjected to force to verify their durability and resistance to breakage.
- **Locking Mechanism Test:** Auto-lock zippers are checked to confirm the functionality of their locking features.

iii. **Dimensional Accuracy Check:**

Using precision measuring tools, the length, width, and spacing of the teeth are measured to confirm they meet the specifications outlined in the Purchase Order (PO).

iv. **Color and Finish Verification:**

For nylon zippers, DTM (Dye to Match) pullers and tape are compared with customer-approved color standards under specialized lighting equipment to ensure exact color matching.

For metal zippers, the electroplated finish is inspected for consistency, shine, and uniformity.

v. **Batch Sampling:**

A random sampling method is employed for bulk orders. Selected samples undergo the complete quality control process to confirm the consistency of the entire batch.

vi. **Rejection and Rework:**

Any products that fail quality checks are marked, recorded, and either reworked or discarded. Causes of rejection are analyzed to prevent similar issues in future production.

vii. **Final Documentation:**

Approved products are packaged according to customer requirements, and a quality control certificate is issued for each batch to maintain traceability and accountability.



Figure 03: Quality Check

Here is the pie chart representing the quality control pass rate, with 98% of items passing and 2% failing. The chart visually emphasizes the high quality of the product, with the "pass" section highlighted for clarity.

8) Packing and Documentation:

Once the zippers pass the quality check, they are packed according to the order specifications. The **packing list** and **challan copy** are prepared at this stage. The **challan** acts as proof of delivery, listing the quantity, type, and other relevant details of the goods.

3.2 Process for Manufacturing Nylon Zipper

The manufacturing process for **Nylon Zippers** follows a similar sequence, with slight variations to accommodate the different materials and assembly requirements.

- 1) **Consumption Setup:** As with the metal zippers, the first step in the production of **Nylon Zippers** is to enter the consumption details based on the **PO sheet**. This helps identify the materials needed for production.
- 2) **Dyeing of Nylon Tape:** The nylon zipper tape is dyed as per the **PO specifications**. The color of the tape is carefully matched to ensure consistency with the customer's request.

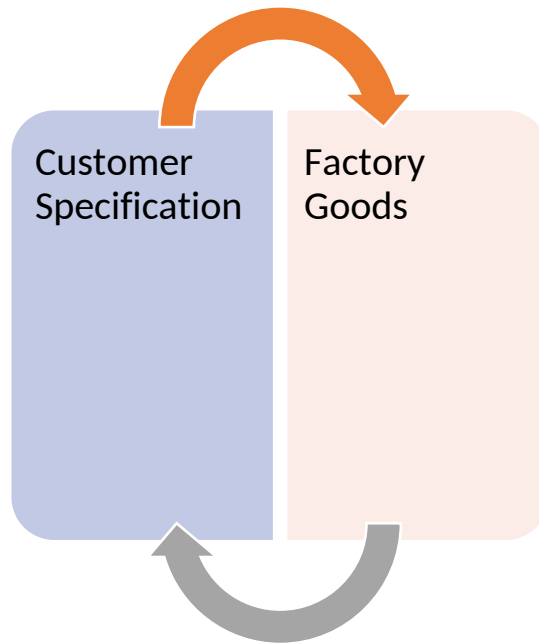


Figure 04: Customer Specs & Factory Goods Matches 98-100%

- 3) **Ironing and Preparation:** After dyeing, the nylon tape goes through an ironing process to remove any wrinkles and ensure a smooth, flat surface. This step is crucial for the proper alignment of the zipper components.
- 4) **DTM (Dye to Match) Painting for Pullers:** One distinguishing feature in the production of nylon zippers is the **DTM (Dye to Match) painting** for pullers. Pullers are sent to the **DTM slider coating machine** to be painted in the exact color required, matching the color of the tape or the customer's design specifications.



Figure 05: Nylon zipper with TAT logo puller

- 5) **Assembly:** The nylon zipper assembly follows similar steps as the metal zipper assembly. However, in this case, **nylon teeth gapping machines** and **nylon-specific**

assembling equipment are used. The assembly involves attaching the **puller, bottom stop wire, top stop wire**, and ensuring the correct sizing of the zipper.

- 6) **Quality Check and Finishing:** As with metal zippers, the assembled nylon zippers are sent to the **finishing section** for a detailed quality check. This includes ensuring that the teeth mesh properly and that the puller works smoothly.
- 7) **Packing and Final Documentation:** Once the quality check is passed, the zippers are packed according to the order. The **packing list** and **challan copy** are prepared, and the products are ready for delivery.

3.3 Machine Overview & Utilization

The production process involves several key machines that assist in different stages of manufacturing. These machines play a vital role in ensuring quality, consistency, and efficiency in the production of both **metal** and **nylon zippers**.

Machines for Metal & Nylon Zippers:

a) **Dyeing Section:**

Electric Heater Bobin Dyeing Machines (50kg, 30kg, 5kg, 1kg)

Color Quality Assurance (Light Box)

b) **Ironing Section:**

Electric Heater Tape Ironing Machines

c) **Teeth Manufacturing:**

YG Teeth Scoping Machines (#3, #4, #5)

d) **Plating Section:**

Metal Teeth Plating Machines

e) **Painting Section:**

DTM Slider Coating (Painting) Machines

f) **Assembly Section:**

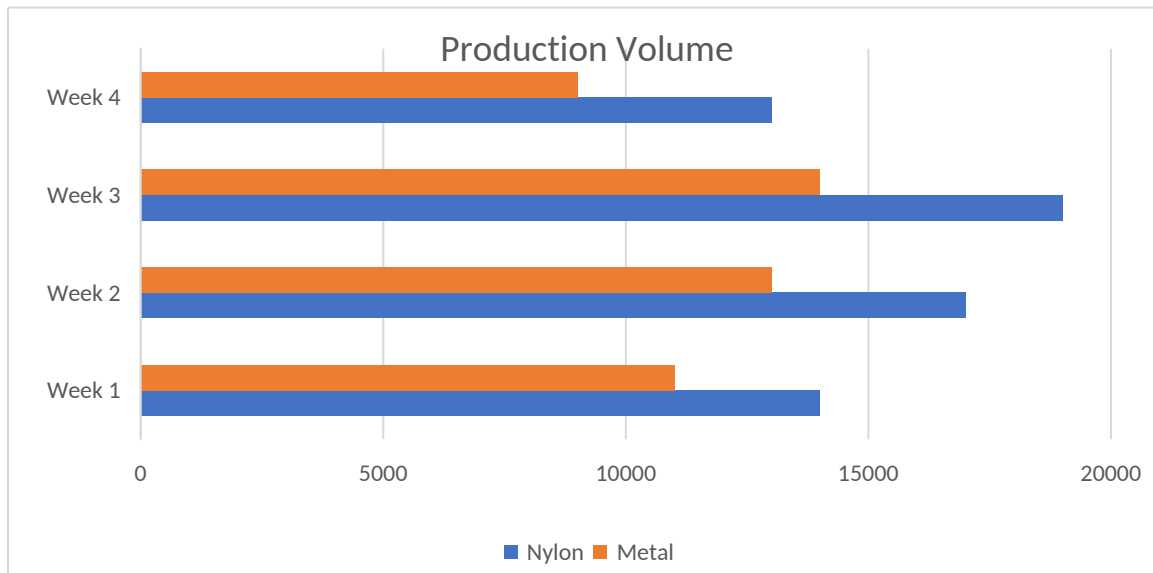
- Fully Automatic Nylon Teeth Gapping Machines
- Fully Automatic Metal and Transparent Bottom/Top Stop Wire Machines
- Nylon Auto-Lock Slider Mountain Machines (#3, Reverse)
- Auto H-Bottom Stopper Machines (#3, #5)
- Auto Lock Slider Mountain Machines (#3, #5)

g) **Assembly Section:**

Cutting Machines (Fully Automatic)

3.4 Performance Metrics and Key Data

- a) **Production Volume:** From the chart we can see that the demand of the nylon zipper is always stays at the top in every week. Also in the middle of the month there is a high pressure seen in the factory. As we see in the 3rd week the volume of the Nylon zipper is 19000 pcs and Metal is 14000 pcs. From that we can conclude that though it's a little less from nylon zipper but metal zippers demand is also good in the market.



- i. **Production Yield Percentage**= Number of Quality Accessories/Total Accessories Produced*100
$$= 185,000/200,000*100$$
$$= 92.5\%$$
- ii. **QPR %** = Number of Good Quality Accessories/Total Accessories Produced*100
$$= 170,000/200,000*100$$
$$= 85\%$$
- iii. **Percentage of Good Quality**= Number of Good Quality Accessories/Total Accessories Produced*100
$$= 170,000/200,000*100$$
$$= 85\%$$
- iv. **Production Cost Per Unit**= Total Production Cost/Total Unit Produced
Nylon= $5.26/100 = \$ 0.0526$
Metal= $29.92/100 = \$ 0.2992$
- v. **Rework Cost %**= Total Rework Cost/Total Production Cost*100
Nylon = $0.80/5.26*100 = 15.21\%$
Metal= $0.80/29.92*100 = 2.67\%$

- b) **Machine Usage Graph:** In the factory there are lot of small machineries here and there. Some of them use regularly and some them are use in occasionally or in special case. The below given machines are used roughly in every day.

Machine Category	Number of Machine
Dyeing Section	4
Ironing Section	2
Y Teeth Section	3
Assembling Section	10
Plating & Electroplating	2

- c) **Average time to Delivery:** Normally the delivery time is 6-7 days. For the nylon zipper need 2-3 days extra in the comparison with metal zipper. Sometimes it also depends upon the quantity. If the quantity is bulk then it requires some more time to ready the goods for delivery.

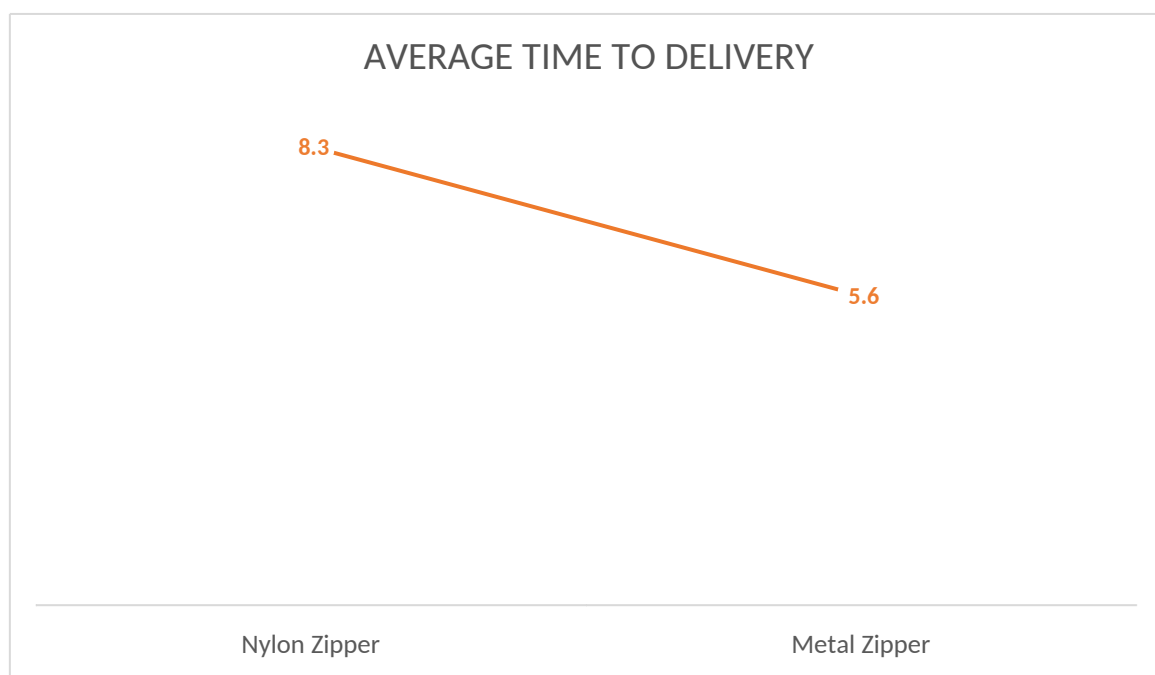
Formula: Average Time to Delivery= The sum of the delivery times for all orders/ Total number of deliveries.

The sum of the delivery times for all orders for Nylon Zipper = $12+8+7+9+8+7+10+8+7+7=83$

Average Time to Delivery for Nylon Zipper= $83/10=8.3$ Days

The sum of the delivery times for all orders for Metal Zipper = $6+5+8+7+3+9+6+4+4+4=56$

Average Time to Delivery for Metal Zipper = $56/10=5.6$ Days



Interpretation: The data reveals the average delivery times for two different types of zippers, Nylon Zipper and Metal Zipper. For the Nylon Zipper, the sum of delivery times for all 10 orders is 83 days, resulting in an average delivery time of 8.3 days. In contrast, the Metal Zipper has a sum of delivery times of 56 days for its 10 orders, leading to an average delivery time of 5.6 days. This indicates that, on average, Nylon Zippers take longer to deliver than Metal Zippers, with a difference of 2.7 days. The faster delivery times for Metal Zippers could be due to various factors, such as faster processing times, more efficient logistics, or availability in closer proximity. The difference in delivery times highlights the variability in shipping efficiency between product types.

Chapter-04

Findings, Recommendations and Conclusion

4.1 Findings of the Study

1. Efficient Production Process

TF Corporation Holdings Limited ensures a seamless workflow by streamlining its operations, from material preparation to rigorous quality checks and final delivery. The process is structured to maximize efficiency while upholding superior product quality.

2. Strong Quality Assurance

With a 98% quality approval rate, the company upholds stringent quality control practices, minimizing defects and ensuring customer satisfaction while preserving its market reputation.

3. Adoption of Advanced Technology

The integration of state-of-the-art machinery, such as automated systems for dyeing, ironing, and assembling, has enhanced operational efficiency and ensured consistent product quality while reducing reliance on manual labor.

4. Capability for Customization

TF Corporation Holding demonstrates flexibility by offering tailored solutions, such as electroplating for metal zippers and dye-to-match (DTM) painting for nylon zippers, meeting diverse client requirements effectively.

5. Commitment to On-Time Delivery

The company prioritizes timely delivery through efficient packing, documentation, and logistics processes. Proper documentation is managed and finalized within the commercial department to ensure operational accuracy and transparency.

4.2 Recommendations

1. Focus on Employee Skill Enhancement

Conduct regular training programs to familiarize employees with the latest techniques and technologies in production. This will boost individual capabilities, reduce errors, and enhance overall productivity. Emphasis should be placed on machine operation, quality assurance, and workplace safety to develop a proficient and confident workforce.

2. Adopt Advanced Automation

Introduce or upgrade automated systems in key production stages, such as electroplating, assembly, and quality checks. Automation can reduce reliance on manual labor, minimize production time, and improve accuracy, leading to better consistency and profitability for the organization.

3. Improve Quality Assurance Measures

Strengthen quality control processes by implementing advanced inspection tools and conducting more frequent checks during production. Early detection of defects will help maintain superior product standards, reduce waste, and boost customer trust by ensuring higher-quality goods.

4. Streamline Supply Chain and Delivery Operations

Enhance supply chain efficiency by using modern inventory management systems and establishing strong relationships with suppliers. This will ensure a steady flow of materials and minimize delays. Optimizing delivery logistics will also improve customer satisfaction by ensuring timely and accurate order fulfillment.

5. Expanding Customization Offerings

Explore additional avenues for customization, such as offering a wider range of materials or specialized finishes. Also, incorporating AI into the customization process could allow for more precise and faster response times to client specifications, helping TF Corporation stay ahead of competitors and attract a broader clientele.

4.3 Conclusion

The production process at TF Corporation Holding demonstrates a well-organized system that prioritizes efficiency, quality, and innovation. By incorporating advanced technologies, efficient workflows, and strong resource management, the company has maintained consistent productivity and met customer expectations. The structured process, from consumption planning to final delivery, showcases the company's dedication to precision and high standards. A major strength of TF Corporation lies in its commitment to continuous improvement. The implementation of quality checks at key stages guarantees that only top-quality products reach customers. Additionally, the use of automation and streamlined operations has minimized waste and optimized time, improving both profitability and sustainability.

While TF Corporation's production process is effective, there are areas with potential for growth. Focusing on further employee skill development, embracing more advanced technology, and improving supply chain efficiency could help the company progress even further. Addressing these areas would strengthen TF Corporation's position in the industry.

In conclusion, TF Corporation Holding's production process highlights the company's operational excellence and focus on delivering high-quality results. With strategic enhancements, it is well-positioned to remain competitive and continue setting industry standards in efficiency and innovation.

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