

Analysis of Topmost Defects in Finishing Department to Ensure the Quality of Readymade Garments in the Apparel Industry

Mousumi Rahaman Hashi¹ and Nusrat Jahan²

¹Lecturer, Department of Textile Engineering

²Lecturer, Department of General Educational Development, Daffodil International University, Mirpur Road, Dhaka- 1207.

ARTICLE INFO

Article history:

Received: 29 March 2018;

Received in revised form:

29 April 2018;

Accepted: 9 May 2018;

Keywords

Readymade garments,
Common defects found in
finishing section.

ABSTRACT

Readymade garments are one of the prior fields of our national economy. Most of the foreign currencies are achieved from this sector. There is always a challenge to survive this sector. If one industry want to stable and try to capture new market then must have to ensure the proper quality garments. After completing the all process involves in garments it needs to inspect finally in finishing department for ensuring better quality. So the purpose of this paper is to identify topmost defects in finishing department for ensuring finishing quality. Data for this work were collected from one RMG Industry of Bangladesh. In this work the data of finishing department like total number of inspected body, no of defective body was collected for 7 days and finally calculated defect percentage from different types of defects found in finishing department. A factory should set different modern quality procedures and quality management technique for the betterment of RMG sector. Broken stitch, skip stitch, join stitch, raw edge, shape out, hole, spot, oil stain etc are the most common defects found in finishing section.

© 2018 Elixir All rights reserved.

1. Introduction

Now a days Textile and apparel industry obtained a remarkable position to enhance the industrial growth and economic prosperity. This industry plays a significant role to increase the employment potential as well as to earn foreign currency[1]. Bangladesh is considered as one of the economic competitor in garments manufacturing. A variety of garments products are exported from Bangladesh to all over the world as it is considered as a 100 percent export oriented sector [2]. More than 70 percent of foreign earnings are obtained by readymade garment. Low labour cost is one of the greatest great advantage of this industry[3].

As the global economic condition has changed rapidly, apparel manufacturers has given more focus on customer demand for high quality product and improved productivity. The demand for higher quality product at lower price is increasing. To survive in an increasingly competitive apparel industry, apparel manufacturers need to improve the quality as well as productivity of the garments operations through defects minimization. It is quite common that a few garments is rejected after every shipment due to various defect which occurs during manufacturing process.[4,5] Low quality raw materials, faulty process as well as employees behavior are mainly responsible for this defects[6]. High defect percentage is one of the major problem of this industry. As a result, expected production cannot be achieved and this is one of the common causes of buyer dissatisfaction. The material and labour required for reworking increases the overall cost of the products[7]. Minimization of reject percentage cannot be done immediately. It is essential to maintain a complete and current written records to reduce the defects percentage.[5]

Cutting, sewing and finishing are the three main sectors of Readymade Garments industry [8].After completing all the

process involves in garments it needs to inspect finally in finishing department for ensuring better quality.

The purpose of this paper is to identify topmost defects in finishing department for ensuring finishing quality. In this work we collected the data of finishing departments for 15 days i.e total number of inspected body, no of defective body and finally defect percentage is calculated from different types of defects found in finishing department. Broken stitch, skip stitch, join stitch, raw edge, puckering, up and down, even stitch, shape out,twist, shade, fabric fault, hole, spot, oil stain, wash effect and poor iron etc are the most common defects found in finishing section. After the end of this investigation we are able to know the defect percentage of this each type of defects. After analyzing the defects percentage we see that overall defect percentage is 10.00.Among various defects higher percentage of defects found in join stitch 1.3% and lowest defects found in twist & poor iron 0.1%.

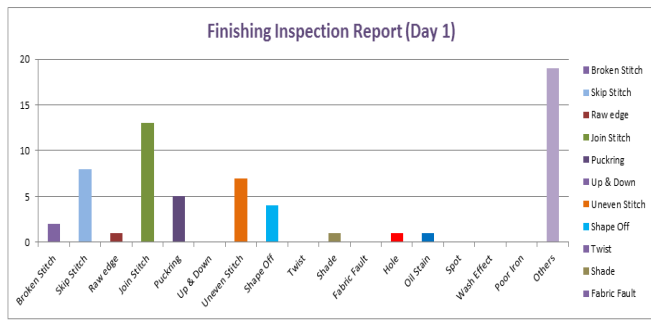
2. Materials & Methods

Fashionable long sleeve shirt is chosen for this investigation. Here Topmost Defects in Finishing Department for long sleeve shirt has been analyzed. The analysis is called DHU analysis. DHU stands for "Defect per Hundred Units". It means number of defeats found or detected per 100 garments.

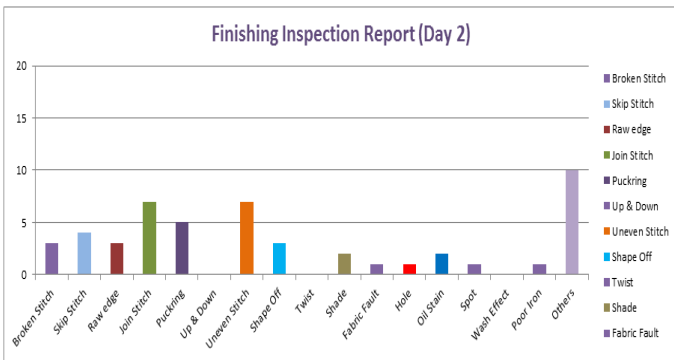
$$DHU = \frac{\text{Total Defects found} * 100}{\text{Total garments inspection}}$$

3. Results & Discussion

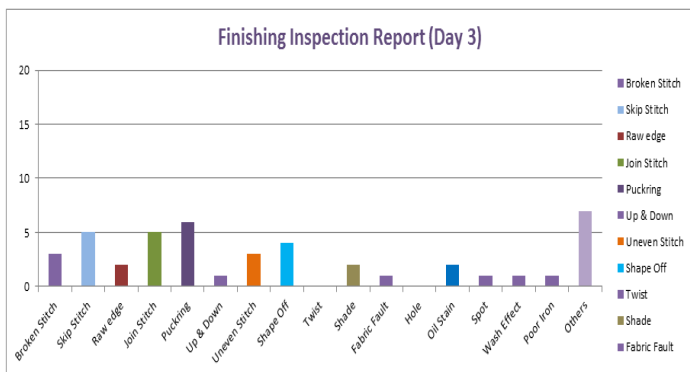
In this graph, finishing inspection report of day 1 is analyzed. The horizontal axis indicates the "Name of defects in finishing department" and the vertical axis indicates the "No of defects". Almost 17 types of finishing defects is observed here.



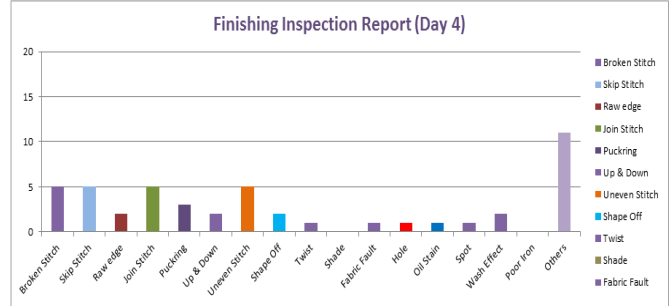
They are: Broken stitch, skip stitch, join stitch, raw edge, puckering, up and down, un even stitch, shape out, twist, shade, fabric fault, hole, spot, oil stain, wash effect and poor iron and others. Among them, the maximum no. of defects is join stitch& the minimum no. of defects is raw edge, shade, hole and oil stain. No defect is found due to up & down, twist, Fabric fault, spot, wash effect and poor iron.



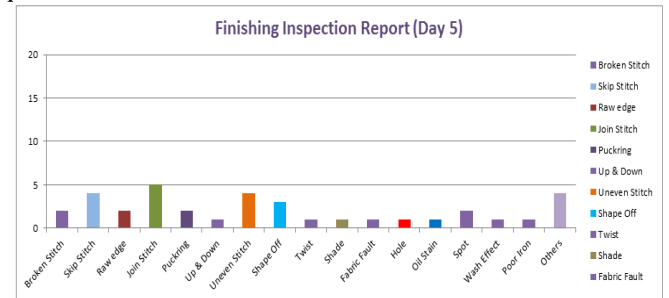
In this graph, Finishing inspection report of day 2 is analyzed. The horizontal axis indicates the “Name of defects in finishing department” and the vertical axis indicates the “No of defects”. Almost 17 types of finishing defects is observed here. They are: Broken stitch, skip stitch, join stitch, raw edge, puckering, up and down, un even stitch, shape out, twist, shade, fabric fault, hole, spot, oil stain, wash effect, poor iron and others. Among them, the maximum no. of defects is join stitch and uneven stitch & the minimum no. of defects is fabric fault, hole and poor iron. No defect is found due to up & down, twist, wash effect.



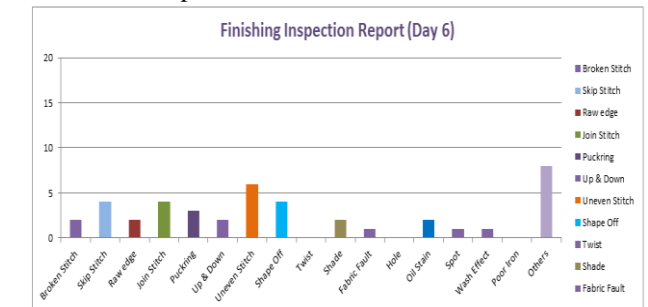
In this graph, Finishing inspection report of day 3 is analyzed. The horizontal axis indicates the “Name of defects in finishing department” and the vertical axis indicates the “No of defects”. Almost 17 types of finishing defects is observed here. They are: Broken stitch, skip stitch, join stitch, raw edge, puckering, up and down, un even stitch, shape out, twist, shade, fabric fault, hole, spot, oil stain, wash effect, poor iron and others. Among them, the maximum no. of defects is found in puckering& the minimum no. of defects is up & down, fabric fault, spot , wash effect and poor iron. No defect is found due to twist and hole.



In this graph, Finishing inspection report of day 4 is analyzed. The horizontal axis indicates the “Name of defects in finishing department” and the vertical axis indicates the “No of defects”. Almost 17 types of finishing defects is observed here. They are: Broken stitch, skip stitch, join stitch, raw edge, puckering, up and down, un even stitch, shape out, twist, shade, fabric fault, hole, spot, oil stain, wash effect, poor iron and others. Among them, the maximum no. of defects is found in broken stitch, skip stitch, join stitch and uneven stitch & the minimum no. of defects is twist, fabric fault, hole, oil stain, spot. No defect is found due to shade and poor iron.



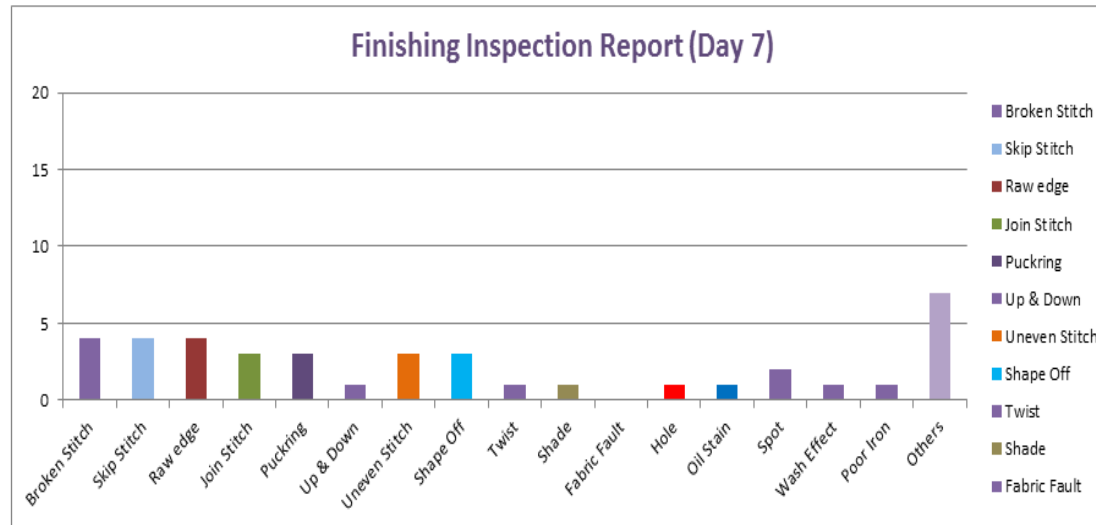
In this graph, Finishing inspection report of day 5 is analyzed. The horizontal axis indicates the “Name of defects in finishing department” and the vertical axis indicates the “No of defects”. Almost 17 types of finishing defects is observed here. They are: Broken stitch, skip stitch, join stitch, raw edge, puckering, up and down, un even stitch, shape out, twist, shade, fabric fault, hole, spot, oil stain, wash effect, poor iron and others. Among them, the maximum no. of defects is found in join stitch. & the minimum no. of defects is up 7 down, twist, shade, fabric fault, hole, oil stain, spot, wash effect and poor iron.



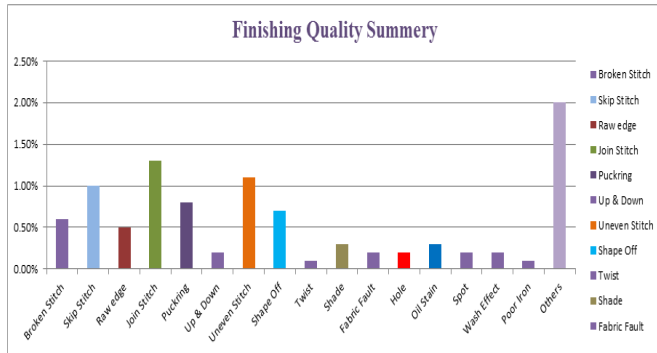
In this graph, Finishing inspection report of day 6 is analyzed. The horizontal axis indicates the “Name of defects in finishing department” and the vertical axis indicates the “No of defects”. Almost 17 types of finishing defects is observed here. They are: Broken stitch, skip stitch, join stitch, raw edge, puckering, up and down, un even stitch, shape out, twist, shade, fabric fault, hole, spot, oil stain, wash effect, poor iron and others. Among them, the maximum no. of defects is found in uneven stitch & the minimum no. of defects is fabric fault, spot and wash effect. No defect is found due to twist, hole and poor iron.

Finishing Quality Summary

Day	Check Qty	Pass Qty	Def Qty	Broken Stitch	Skip Stitch	Raw Edge	Join Stc	Puckering	Up & Down	Un-Even Stc	Shape Off	Twist	Shade	Fabric Fault	Hole	Oil Stain	Spot	Wash Effect	Poor Iron	Others	Ttl
1	467	416	51	2	8	1	13	5	0	7	4	0	1	0	1	1	0	0	0	19	62
2	463	425	38	3	4	3	7	5	0	7	3	0	2	1	1	2	1	0	1	10	53
3	461	418	43	3	5	2	5	6	1	3	4	0	2	1	0	2	1	1	1	7	44
4	458	424	34	5	5	2	5	3	2	5	2	1	0	1	1	1	1	2	0	11	47
5	450	423	27	2	4	2	5	2	1	4	3	1	1	1	1	1	2	1	1	4	36
6	458	424	34	2	4	2	4	3	2	6	4	0	2	1	0	2	1	1	0	8	42
7	484	453	31	4	4	4	3	3	1	3	3	1	1	0	1	1	2	1	1	7	40
Ttl	3241	2983	258	21	34	16	42	27	7	35	23	3	9	5	5	10	8	6	4	66	324
Defect %				0.6%	1.0%	0.5%	1.3%	0.8%	0.2%	1.1%	0.7%	0.1%	0.3%	0.2%	0.2%	0.3%	0.2%	0.2%	0.1%	2.0%	10%
Total Defect %-10%																					



In this graph, Finishing inspection report of day 7 is analyzed. The horizontal axis indicates the “Name of defects in finishing department” and the vertical axis indicates the “No of defects”. Almost 17 types of finishing defects is observed here. They are: Broken stitch, skip stitch, join stitch, raw edge, puckering, up and down, uneven stitch, shape out, twist, shade, fabric fault, hole, spot, oil stain, wash effect, poor iron and others. Among them, the maximum no. of defects is found in Broken stitch, skip stitch, raw edge & the minimum no. of defects is up and down ,twist, shade, hole, oil stain, wash effect, poor iron. No defect is found due to fabric fault.



In this graph, The overall Finishing inspection report of 7 days is analyzed. The horizontal axis indicates the “Name of defects in finishing department” and the vertical axis indicates the “No of defects”. Almost 17 types of finishing defects is observed here. Among them, the maximum defects percentage is found in Join stitch which is 1.3% & the minimum defects percentage is found due to twist and poor iron which is 0.1%

4. Conclusion

The purpose of this work was to identify the top most defects found in finishing department. For this purpose long sleeve shirt was chosen as fashionable apparel. The most common defects found in finishing department is Broken stitch, skip stitch, join stitch, raw edge, puckering, up and down, un even stitch, shape out, twist, shade, fabric fault, hole, spot, oil stain, wash effect, poor iron etc. Among all of these defects some are major and some are non-major defects. Major defects are broken stitch, skipped stitch, fabric hole, down stitch etc. Non-major defects are broken stitch, oil stain, poor iron etc. If machine operator are careful during operating

the machine and machine is ok then it is possible to minimize the number of percentage of the defects occurs in finishing department in the garments. Training for the operator is an important factor to minimize the defects. We should aware that 1% defective product for an organization is 100% defective for the customer who buys that defective product. By accessing the quality of the operator unskilled operator may be trained or removed from the factory and replacing the defective machine it is possible to maintain the quality of the readymade garments.

References

- 1.RsjeshBheda, Productivity in Indian Apparel Industry:Paradigms and Paradigms and Paragons, Clothing Research Journal,Vol.2No.1 pp.37-42,2004
- 2.Syeda Sharmin Absar, Problem surround in wages, The readymade garments sector in Bangladesh,Asia Pacific press at 2001,Vol 2,Number 7
- 3.Rubayet Karim,Chowdury M L Rahman,Application of Lean Manufacturing Tools for Performance Analysis: A Case Study, *Proceedings of the 2012 International Conference on Industrial Engineering and Operations Management Istanbul, Turkey, July 3 – 6, 2012*
- 4.Md. Mazedul Islam ,Adnan Maroof Khan, Md. Mashiur Rahman Khan,MINIMIZATION OF REWORKS IN QUALITY AND PRODUCTIVITY IMPROVEMENT IN THE APPAREL INDUSTRY,International Journal of Engineering and Applied Sciences,January 2013. Vol. 1, No.4,147-164
- 5.Md. Mazedul Islam1, Adnan Maroof Khan1 and Md. Mashiur Rahman Khan, Minimization of Defects in the Sewing Section of Apparel Industry, *Research Journal of Management Sciences* ,Vol. 2(8), 10-15, August (2013)
- 6.<http://www.fibre2fashion.com/industry/article/7220/quality-and-productivity-improvement-in-apparel-industry>
- 7.N.A.M.R.Senaviratna, Application of Generalized Linear Model to the Minimization of Defectives in Sewing Process of Apparel Industry, International Journal of Scientific and Research Publication 3(7) 2013.
- 8.A.T.M. Mohibullah, UmmeMagreba Takebira, ZiniaAnjuman Ara1, Md. Maksudur Rahman, Cost and Time Savings of Apparel Industry throughElimination of Non-valuated Process in Cutting Section, International Journal of Textile Science 2017, 6(2): 49-56